

Southern Nevada Public Land Management Act of 1998 (Public Law 105 - 263)
Round 18 Nominations - Conservation Initiatives
Preliminary Recommendation

The following is a prioritized list of Conservation Initiatives project nominations that have been received and reviewed for possible funding under Round 18 of the Southern Nevada Public Land Management Act of 1998 (Public Law 105 - 263). The purpose of releasing these lists is to obtain input from interested parties. Beginning March 1, 2021, the BLM is accepting written comments on these nominations until close of business (4:30 PM Pacific Time) on April 14, 2021. Comments should be mailed to the SNPLMA Executive Committee Chair, BLM Southern Nevada District Office, 4701 N. Torrey Pines Dr., Las Vegas, NV 89130, faxed to (702) 515-5110, or emailed to snplma@blm.gov. The SNPLMA Executive Committee will meet following the comment period to review comments received to develop a final recommendation for consideration by the Secretary of the Interior in consultation with the Secretary of Agriculture. Questions may be addressed to the SNPLMA Division, BLM Southern Nevada District Office at (702) 515-5116.

Round 18 Conservation Initiatives Recommended Primary Funding List							
Rank	Tab #	Project Name	Requesting Entity	Location	Nomination Request	Funding Recommended	Total Recommendation
1	9	Protecting Wild Caves	NPS	Caves in the South Snake Range (GRBA) and the North Snake, Schell Creek, Ruby Mountains, White Pine, and Egan Ranges (USFS) in White Pine County, NV	\$2,247,095	\$2,247,095	\$2,247,095
2	2	Arrow Canyon	BLM	Northwest of Moapa, NV; Northeast of Las Vegas, NV	\$2,877,773	\$2,877,773	\$5,124,868
3	3	Butterfly Habitat Restoration	USFS	Spring Mountains National Recreation Area	\$4,390,000	\$4,390,000	\$9,514,868
4	8	Native Fishes Refugium	FWS	Pahranagat National Wildlife Refuge, Alamo, NV	\$528,627	\$528,627	\$10,043,495
Totals for Round 18 Conservation Initiatives Recommended Primary Funding:					\$10,043,495	\$10,043,495	
Round 18 Conservation Initiatives Recommended Secondary Funding List							
Rank	Tab #	Project Name	Requesting Entity	Location	Nomination Request	Funding Recommended	Total Recommendation
5	7	Muddy River Floodplain Restoration	BLM	North of Moapa Paiute Reservation; South of Moapa Valley National Wildlife Refuge	\$3,419,670	\$3,419,670	\$13,463,165
6	4	Cultural and Paleontological Resource Protection	USFS	Mt. Moriah Unit of the Ely Ranger District, North Snake Range	\$955,381	\$955,381	\$14,418,546
7	5	Habitat Restoration, Protection, and Stewardship	FWS	Desert National Wildlife Refuge, Corn Creek	\$2,051,923	\$2,051,923	\$16,470,469
Totals for Round 18 Conservation Initiatives Recommended Secondary Funding:					\$6,426,974	\$6,426,974	
Round 18 Conservation Initiatives Not Recommended Funding List							
Rank	Tab #	Project Name	Requesting Entity	Location	Nomination Request	Funding Recommended	Total Recommendation
8	11	Riparian Restoration	FWS	Moapa Valley National Wildlife Refuge, Clark County, NV	\$737,080	\$0	\$16,470,469
9	6	Historic Hoover Dam Railroad Tunnels	NPS	Lake Mead National Recreation Area near Boulder City, NV	\$17,045,740	\$0	\$16,470,469
10	10	Recreation and Environmental Alliance	USFS	Spring Mountains National Recreation Area, Clark County, NV	\$1,856,542	\$0	\$16,470,469
11	1	Abandoned Mine Land Closure - WPC	BLM	Throughout White Pine County, NV, public lands managed by the Bureau of Land Management, Ely District Office.	\$1,517,680	\$0	\$16,470,469
Totals for Round 18 Conservation Initiatives Not Recommended Funding:					\$21,157,042	\$0	
Totals for Round 18 Primary Funding Recommendation:							\$10,043,495
Totals for Round 18 Secondary Funding List:							\$6,426,974
Totals for Round 18 Recommended List:							\$16,470,469

Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

Bureau of Land Management
Ely District Office



Abandoned Mine Land Closure

Amount Requested: \$1,517,680

Timeframe: 5 Years
Congressional District NV-4
Location: 39.36912° / -114.895075°

Project Manager: Kelsey Bynum
Email address: kbynum@blm.gov
BLM Ely District
702 N. Industrial Way
Ely, Nevada 89301
Phone (775) 289-1853

Purpose Statement:

The Bureau of Land Management (BLM), Ely District will close 75-95 high priority abandoned mine land (AML) sites in White Pine County, Nevada to enhance safety and reduce the threat that open AML sites inherently create for people and wildlife on public lands.

Background info to support the need:

This project proposes to secure an additional 75-95 sites in White Pine County that were identified by inventories completed by Nevada Division of Minerals as being higher risk to public and wildlife safety. Concentrations of known AML hazards will be checked for inventory, surveyed for biological and cultural values, and have a final determination as to the appropriate closure method (wildlife gating, foam closure, or backfilling).

AML sites continue to be a serious threat in White Pine County to people and wildlife. Over 2,000 AML hazardous features have been identified throughout the county. As recreation and other uses on public lands increase there is a greater potential for fatal contact with abandoned mine features. Such mines throughout the western United States are recognized as a significant source of injury and mortality. Experience has shown that all users are at risk on lands that contain such features, regardless of their activities or intentions.

This project will enable the BLM to secure approximately 75-95 of the highest priority AML features within White Pine County which pose significant threats to public and wildlife safety, by bat gating, backfilling, and foam filling. Additionally, it will provide opportunities for volunteer partners in the active mining industry, in the community, to backfill other sites cleared in the process of this work. AML sites are often valuable wildlife habitat, especially for bats, and may include significant cultural resources. In some cases, they are also a threat to these resources. Deaths of bobcats, small mammals, reptiles, and even bighorn sheep have occurred in such sites. This project promotes community by improving the quality of life for humans, protecting the integrity of biological communities and cultural sites, and allows for safer access to people enjoying nature and recreational opportunities across the landscape.

Relationship to prior approved phases or related SNPLA projects and description of anticipated phases:

The Rounds 7 and 9 projects were completed in September of 2012, with the successful closure of 106 abandoned mine sites in White Pine County.

This project is not phased. The Ely District has completed two previous SNPLMA projects that inventoried and implemented abandon mine closures. No future phases are anticipated.

Deliverables:

The project will be complete based on the following primary deliverables or when the period of performance has expired:

Primary Deliverables:

- Cultural inventory of approximately 75-95 or more abandoned mine sites.
- Wildlife and bat inventory of approximately 75-95 or more abandoned mine sites.
- Sensitive plant inventory of approximately 75-95 or more abandoned mine sites within the project area.
- Permanent Closure of 75-95 physical safety hazards

Anticipated deliverable (contingent upon surveys or monitoring results)

- Secure approximately 75-95 or more abandoned mine sites.

Standard deliverable

- Cultural inventory of sites within the project area.
- Securing safety hazards
- Wildlife and bat inventory of sites within the project area.
- Sensitive plant inventory of approximately sites within the project area.
- Final Accomplishments and project closeout.
- Cultural survey report with recommendations for protection

Project Timeframe:

The period of performance request is for 5 years, including 90-days for project closeout. And the timeline for implementing this project is:

- Year 1 - Contract and begin Cultural Inventory
 - Contract and begin Sensitive Plant Inventory
 - Contract and begin Bat Surveys Issue Assistance Agreements.
- Year 2 - Complete inventories and surveys, and make determinations
- Year 3 - Begin permanent closure abandoned mine sites
- Year 4 - Complete permanent closure abandoned mine sites
- Year 5 – Monitoring of sites and Project close out

After review of the AML inventory, the implementation process may include all or some of the following steps:

- Temporary removal, exclusion, or transplanting of sensitive wildlife and protected plants likely to be impacted by construction.
- Construction of wildlife compatible human enclosures, usually metal gates or cupolas, to approved designs, and at times and seasons which will minimize biological impacts
- Closure of sites determined to be historically or culturally important in ways that do not cause immitigable impacts (gating, foaming, etc.).
- Backfilling of sites where such activity is determined to have no significant impact on biological or cultural values.
- Sites determined to experience high wildlife use will be monitored for one year following gate/cupola construction to ensure that wildlife use has not been compromised and that the structures are intact.
- Foam-closed and backfilled sites will be checked after one year for integrity and subsidence.

- A report with maps and GIS data shall be prepared to document the construction and survey work.
- A report of cultural surveys shall be provided to SHPO in satisfaction of BLM's obligations.

Level of Readiness for Implementation:

The BLM has an inventory of identified sites that include extensive descriptions. Based on wildlife and cultural data the district will review current NEPA and complete any additional NEPA. Sites will then be closed as appropriate. The project manager is the District Safety Officer this will be a primary workload for her to implement. The BLM Nevada State Office is also providing expertise and support to the project including assisting with implementation and has a proven track record of successfully completing closures in a timely manner.

Future Operations and Maintenance:

Not applicable

Partnerships and/or contributed funds:

Although the BLM will work with the NDOM and NDOW to complete the closures, each party has an interest in mine closures and the three parties will work closely together.

The remainder of the page intentionally left blank.

Funding Summary and Budget Detail:

ROUND 18		
CONSERVATION INITIATIVES NOMINATION		
ESTIMATED DIRECT COSTS & KEY MILESTONES		
Project Name:	Environmentally Responsible Closure of Abandoned M	Date prepared: 9/14/2020
		Agency: Bureau of Land Management
Project #		Priority #:
Prepared by:	Kelsey Bynum	Phone #: 775-289-1853
Title/position:	Environmental Protection Specialist, Project Manager	
1 Planning & Environmental Documentation		
	\$136,880	9.02%
Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)		
2 FWS Consultation - Endangered Species Act		
	\$34,400	2.27%
Direct expenses or FWS consultation, if required.		
3 Direct Federal Labor to Implement Project (Payroll)		
	\$325,600	21.45%
For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.		
4 Project Equipment and/or Supplies and Materials		
	\$0	0.00%
Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.		
5 Travel and Per Diem for Implementation		
	\$4,500	0.30%
Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below		
6 Official Vehicle Use (vehicles with Federal license only)		
	\$1,750	0.12%
Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost		
7 Training (required to implement the project)		
	\$4,500	0.30%
Includes training essential/necessary for implementation of the project.		
8 Contracts, Grants, and/or Agreements		
	\$920,000	60.62%
CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan.		
9 Other Necessary Expenses		
	\$90,050	5.93%
(See Appendix B-11)		
Total requested/estimated budget		\$1,517,680
		100.00%
10 Estimated agency or partner contribution		
	\$0	
Total Estimated project value		\$1,517,680

Performance Measures:

The typical implementation process is:

- Temporary removal, exclusion, or transplanting of sensitive wildlife and protected plants likely to be impacted by construction.
- Construction of wildlife compatible human enclosures, usually metal gates or cupolas, to approved designs, and at times and seasons which will minimize biological impacts.
- Closure of sites determined to be historically or culturally important in ways that do not cause immitigable impacts (gating, foaming, etc.).
 - Backfilling of sites where such activity is determined to have no significant impact on biological or cultural values.
 - Sites determined to experience high wildlife use will be monitored for one year following gate/cupola construction to ensure that wildlife use has not been compromised and that the structures are intact.
 - Foam-closed and backfilled sites will be checked after one year for integrity and subsidence.
- A report with maps and GIS data shall be prepared to document the construction and survey work.
- A report of cultural surveys shall be provided to SHPO in satisfaction of BLM's obligations.

This project will implement AML closures, for up to 95 sites resulting completion of the following performance measures:

Performance measure	Description
H15	Number of Conservation Actions Implemented for Non-listed Species- up to 95 sites will be surveyed and inventoried for wildlife habitat for bats and other species that use AML as habitat.
C1	Number of Cultural or Historic Sites or Structures Stabilized or Protected – up to 95 sites will be protected.
O1	Number of Hazardous Sites Remediated – up to 95 hazardous sites will be remediated.

Executive Committee Strategic Plan Values:

The Executive committee I Strategic Plan identified sustainability, connectivity, and community as desired values for SNPLMA funded projects.

- 1. Project promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support.**

This project implements closure of AML sites with a habitat restoration component that supports habitat enhancement, cultural resources, and/or public health and safety through sustainable practices such as bat gates and foam closures that will reduce access to these hazardous sites, but allow access for wildlife that need these sites as part of their habitat. Implementation of this project will provide an immediate benefit that will last for future generations to

conserve and sustain healthy and resilient landscapes with the public able to safely access areas and providing durability, relevancy, and shared support.

2. Project promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites.

AML sites continue to be a serious threat in White Pine County to people and wildlife. Over 2,000 AML hazardous features have been identified throughout the county. As recreation and other uses on public lands increase there is a greater potential for fatal contact with abandoned mine features. Such mines throughout the western United States are recognized as a significant source of injury and mortality. Experience has shown that all users are at risk on lands that contain such features, regardless of their activities or intentions.

This project will enable the BLM to secure approximately 75-95 of the highest priority AML features within White Pine County which pose significant threats to public and wildlife safety, by bat gating, backfilling, and foam filling. In addition, it will provide opportunities for volunteer partners in the active mining industry, in the community, to backfill other sites cleared in the process of this work. AML sites often are often valuable wildlife habitat, especially for bats, and may include significant cultural resources. In some cases, they are also a threat to these resources. Deaths of bobcats, small mammals, reptiles, and even bighorn sheep have occurred in such sites. This project promotes community by improving the quality of life for humans, protecting the integrity of biological communities and cultural sites, and allows for safer access to people enjoying nature and recreational opportunities across the landscape.

3. Project promotes sustainability, connectivity, and community by connecting people to nature and recreational opportunities by uniting communities with important places across the landscape.

This project continues the very important work that has been accomplished in White Pine, Lincoln, and Clark Counties through SNPLMA funding to protect the public and preserve habitat at over 500 mine features. The project will be modeled after similar work already completed and underway in White Pine, Lincoln, Clark Counties and elsewhere in Nevada. Round 7 and 9 were completed in September of 2012, with the successful closure of 106 abandoned mine sites. This project will secure an additional 75-95 sites in White Pine County that were identified by inventories completed by Nevada Division of Minerals as being higher risk to public and wildlife safety. Concentrations of known AML hazards will be checked for inventory, surveyed for biological and cultural values, and have a final determination as to the appropriate closure method (wildlife gating, foam closure, or backfilling) meeting the needs of both the BLM and the State of Nevada

Compliance with Departmental Priorities, Strategic Goal, Executive Orders, or Secretarial Orders:

This project will meet the following SNPLMA Strategic Plan Goals

Goal 1: Sustain the quality of the outdoor environment by conserving, preserving, and restoring natural, cultural, and historic resources.

Goal 3: sustainability, connectivity, and community

The project is consistent with the following Executive and Secretarial Orders

- SO No. 3347: Conservation Stewardship and Outdoor Recreation
- SO No. 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes and Territories, and
- SO No. 3366: Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior

This project will secure abandon mine land hazards directly contributing to the safety of people and wildlife on public lands, and to advance conservation stewardship and increased outdoor recreation opportunities, including hunting and fishing, for all Americans. The project ensures public lands and waters under the management and administration of the U.S. Department of the Interior are open and accessible for recreational pursuits by all Americans and visitors to the United States.

Ranking Criteria:

Criteria 1. *The nomination supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability.*

The project will identify, evaluate, and protect public health and safety, as well as cultural and natural resources associated with abandoned mine sites. Sites will be closed with sustainable practices and improve connectivity between the public and public land access.

Criteria 2. *The nomination promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support.*

This project conserves and restores to ensure availability for future generation, and it restores the functionality, resilience, and integrity of biological communities and/or cultural resources through prudent management and prevention of injury by closing abandon mine lands while ensuring the protection of habitat and cultural resources. Many of these sites have been open since the early 1900s, and without this project they would remain open. This project is relevant, and the closures will continue to provide a substantial long-term benefit for decades.

Criteria 3. *The nomination promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites.*

This project encourages people to meaningfully connect with their natural environment and helps them appreciate and care for the environment safer access to those enjoying

public lands. This project is a direct result of inventory data evaluated by the State of Nevada who funded the evaluation. There is also an expectation that active mining operations may close abandon mines in their areas at the same time based on the State of Nevada evaluation. Mining is an important historic component of the development of public lands in Nevada and AML sites with significant cultural values will be mitigated by collecting data, completing a report and identifying appropriate mitigation to preserve this information.

Criteria 4. *The nomination promotes sustainability, connectivity, and community by linking people to nature and recreation by uniting communities with important places across the landscape.*

This project meets the needs of the State of Nevada Division of Minerals and the Nevada Department of Wildlife, as well as the BLM by closing abandon mine sites identified. The Nevada State Historic Preservation Office is also included in the process to review and recommend actions regarding historical sites impacted by the closures. All of these entities are involved in the project. Also, active mining operations are contacted regarding any closures that may benefit or impact their operations. The BLM and the State of Nevada currently have an active public outreach and education process to warn the public about these safety hazards.

Criteria 5. *The nomination has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project.*

The BLM and the State of Nevada have committed other funding to complete similar closures throughout Nevada including White Pine County. Although this is funded by other sources the critical nature of ensuring public safety and the sheer volume of these sites from prior mining activities necessitate that the BLM seek every opportunity to secure these sites.

Criteria 6. Advances the Agency/Entity Priorities

See the section below. For relevant Performance measures.

Criteria 7. Consistence with Secretarial Orders (SO), Executive Orders (EO) and Directives

See the section below. For relevant Performance measures.

The remainder of the page intentionally left blank.

Maps:

Ely Round 2 AML Closure Map Overview Map

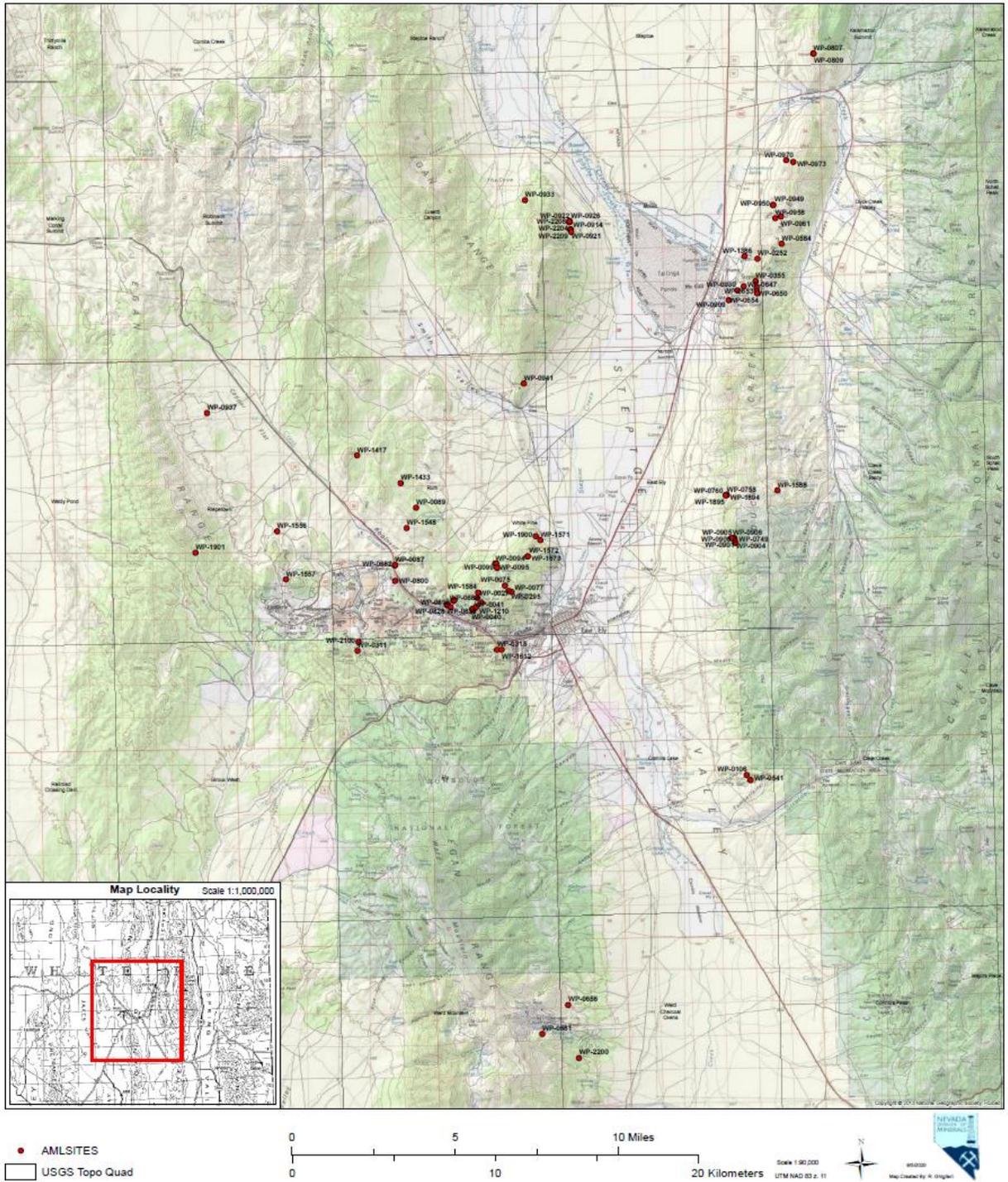


Figure 1 Locations of past AML closures in White Pine County

Photos:

Figure 2 Typical adit prior to closure



Figure 3 Typical adit after closure with bat gate.



Figure 4 Open shaft near Ruth, prior to closure.



Figure 5 Shaft after closure using foam method

Letters of Support:

1. **State of Nevada, Department of Wildlife**
2. **State of Nevada, Division of Minerals**



Steve Sisolak
Governor

STATE OF NEVADA
DEPARTMENT OF WILDLIFE

6980 Sierra Center Parkway, Suite 120
Reno, Nevada 89511
Phone (775) 688-1500 • Fax (775) 688-1495

TONY WASLEY
Director

JACK ROBB
Deputy Director

8 September 2020

Robbie McAboy, District Manager
Bureau of Land Management
702 N. Industrial Way
Ely, Nevada 89301

Dear Robbie,

The Nevada Department of Wildlife would like to express our support for the Bureau of Land Management's SNPLMA Round 18 proposal "Environmentally Responsible Closure of Abandoned Mine Safety Hazards in White Pine County".

BLM, NDOM, and NDOW have a twenty-year history of collaborating to mitigate abandoned mine land (AML) hazards across Nevada while working diligently to conserve important wildlife and cultural resources. After surveying many thousands of AMLs in Nevada, currently we have protected more than 1,300 mines statewide with bat compatible closures. Our collaborative efforts have allowed Nevada to have the most successful and respected AML mitigation program in the country. NDOW looks forward to continued collaboration with federal and state partners to both secure abandoned mines and protect sensitive biological and cultural resources in Nevada.

If you have questions, please do not hesitate to contact me.

Sincerely,

Jason Williams
Nevada Dept. of Wildlife
1218 N. Alpha Street
Ely, Nevada 89301
775-289-1655, x23
jasonw@ndow.org



STEVE SISOLAK
Governor

STATE OF NEVADA
COMMISSION ON MINERAL RESOURCES
DIVISION OF MINERALS
400 W. King Street, Suite 106
Carson City, Nevada 89703
(775) 684-7040 • Fax (775) 684-7052
<http://minerals.nv.gov/>

Las Vegas Office: 375 E. Warm Springs Rd. #205, Las Vegas, NV 89119
Phone: (702) 486-4343; Fax: (702) 486-4345



MICHAEL VISHER
Administrator

September 4, 2020

RE: SNPLMA Round 18 Funding for Environmentally Responsible Closure of Abandoned Mine Safety Hazards in White Pine County

Mr. Robbie McAboy,

The Nevada Division of Minerals (Division) pursuant to NAC 513 has operated the State of Nevada's Abandoned Mine Lands (AML) physical safety program since 1987. Partnerships between federal, State and local government stakeholders have been vital to the program's continued successes in safeguarding the public from the dangers of abandoned mines. The Bureau of Land Management, U.S. Forest Service, National Park Service, and Division are continuously coordinating AML-remediation efforts through meetings, data sharing, closure prioritization and collaboration on projects.

State and federal government agencies that work to remediate historic abandoned coal-mine lands often receive significant funding from the Surface Mining Control and Reclamation Act of 1977, which includes a tax that is dedicated to coal AML reclamation. Additionally, some states receive dedicated AML-remediation funding through various tax revenue sources. Nevada's AML program relies heavily on a fee generated from mining-claim filings -- in recent years this has averaged about \$1.5 million per annum.

A recent U.S. Government Accountability Office report (GAO-20-238) addressing hardrock AML issues found that the estimated cost to visit and inventory all remaining hardrock AML hazards on BLM-managed lands at \$510 million, with an additional **\$4.7 billion** for remediation. The BLM currently allocates about \$5.6 million annually on remediating hardrock AML physical safety hazards nationwide.

The Division actively seeks unique partnership opportunities with federal, State and local government entities in an effort to maximize the number of dangerous abandoned mines remediated each year. Past rounds of SNPLMA funding have been used in partnerships between the Division and local governments to perform AML hazard remediation and wildlife conservation -- please review the enclosed reports for additional information on some of our recent partnership projects.

The Division strongly recommends SNPLMA Round 18 funding of the "Environmentally Responsible Closure of Abandoned Mine Safety Hazards in White Pine County" project. This project will safeguard the public from the dangers of over 75 hazardous abandoned mines, protect the County, State and

federal government from civil liabilities, conserve precious wildlife habitat and cultural features, and showcase local, State and federal partnerships.

If you have any questions regarding the Division's support of this project or Nevada's physical safety AML program please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'R. Ghiglieri', with a stylized flourish at the end.

Robert Ghiglieri
Deputy Administrator
Nevada Division of Minerals
rgiglieri@minerals.nv.gov
775-684-7048

SNPLMA Round 18
CI – Bureau of Land Management Addendum

Nomination: Tab 2

Entity: Bureau of Land Management, Southern Nevada District Office

Project: Arrow Canyon

Revision: Overall budget request was reduced from \$2,891,773 to \$2,877,773 due to adjusted labor expenses.

Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

Bureau of Land Management
Southern Nevada District Office



Arrow Canyon

Amount Requested: \$2,877,773

Congressional District NV-4
Timeframe: 5 Years
Location: 36.747101° / -114.805789°

Project Manager: Lara Kobelt
Natural Resource Specialist
Email address: lkobelt@blm.gov
Phone number (702) 515-5022

Purpose Statement:

The Bureau of Land Management (BLM) will evaluate flooding and the impact on cultural resources within Arrow Canyon and restore approximately 45 acres of Pahranaagat Wash in Arrow Canyon to improve long-term conservation, returning it to a pre-European settlement conditions and improve the cultural context, improve wildlife habitat, protect unique and abundant cultural resources threatened by wildfire and flooding related sedimentation. The restoration project will improve downstream water quality in the Muddy River watershed, wildfire risk will be drastically lowered. Arrow Canyon's cultural resources will be documented and nominated as an archaeological district to the National Register of Historic Places.

Background info to support the need:

Pahranaagat Wash, which is the ephemeral watercourse running through Arrow Canyon, is a major tributary of the Muddy River. This river is extremely important it is one of the only above ground rivers in the driest desert in North America.

As a result of this location's proximity to major waterways, Native Americans have a strong presence, both past and present, in this area. Arrow Canyon was an important location for hunting bighorn sheep, and the legacy of the prehistoric use of this area makes it one of the most important archeological sites in southern Nevada today.

Entering Arrow Canyon, the walls stretch high above you, creating shade to search out on a hot summer day. It is not hard to imagine why the Moapa Band of Paiute ancestors spent so much time here. Even the most unobservant passerby cannot help but notice the plethora of petroglyphs that adorn the canyon walls. Petroglyphs etched into the carbonate rock (a rare substrate for petroglyphs in southern Nevada) form elaborate panels, with some of the best representations of bighorn sheep you can find. Human and human-like figures stretch far up the canyon walls with snakes, tortoises, and many other shapes. There is evidence of agave roasting pits, shelter caves, rock alignments, lithic scatters, stone metates, and arrowheads. If you make the climb to the top of the canyon walls, you can crouch behind stone hunting blinds, which Native Americans used to box desert bighorn sheep into narrow side canyons or back them up against steep cliffs during hunts. The most fascinating feature in Arrow Canyon may be "Altar Rock," a large, intricately carved boulder, which is still an important part of modern-day Native American religious and ceremonial activities.

The project area is within the Mormon Mesa Area of Critical Environmental Concern (ACEC), which was designated because it is desert tortoise critical habitat. The need for inspection and documentation of current conditions were identified by the BLM in the Arrow Canyon Wilderness Area Final Wilderness Management Plan Environmental Assessment (BLM, 2013).

The increased silt and clay from deposited sediment and increased retention of moisture in the wash has contributed to the establishment of invasive weeds, including tamarisk. These weed species have displaced native vegetation and increased the amount of flammable material and fire hazard within the canyon. A severe wildfire would be disastrous to the Canyon's cultural

resources. Smoke and heat from wildfires can damage petroglyph panels, and many of the tamarisk stands in the canyon grow in dense thickets right up to the Canyon walls.

The following invasive weed species are abundant in Arrow Canyon: tamarisk (*Tamarix ramosissima*), red brome (*Bromus madritensis/B. rubens*), cheatgrass (*Bromus tectorum*), African mustard (*Malcolmia africana*), Malta starthistle (*Centaurea melitensis*), Scotch thistle (*Onopordum acanthium*), and Canada thistle (*Cirsium arvense*). Several of these species are listed as Noxious Weeds by the State of Nevada, which requires landowners or land managers to control them (Nevada Revised Statutes Chapter 555). Arrow Canyon has the only reported incidence of Canada thistle in Clark County, and control is needed to prevent spread of this and other weeds downstream to the Muddy River and Lake Mead watersheds.

The southern and western portions of the project area are within the Arrow Canyon Wilderness, including approximately 22 acres of invasive weeds. Invasive weeds are spreading into the Wilderness from the wash above and below the dam.

Wildlife in Arrow Canyon includes the previously mentioned desert bighorn sheep (*Ovis canadensis nelsoni*), which is an important game species. Upland areas contain habitat for the desert tortoise (*Gopherus agassizii*), a federally listed Threatened species. Tortoises can also be found in the wash, foraging for food. The project site is within designated Critical Habitat for desert tortoise. Invasive weeds outcompete and displace native plants that provide better nutrition for tortoises and other wildlife. They also displace native plants, such as mesquite trees and native grasses, that would have had traditional uses for food, baskets, and shelter by Native Americans.

Arrow Canyon is a popular area for off-highway vehicle (OHV) use, rock climbing, hiking, and camping. This is an important area for bighorn sheep, and so hunters with permits for desert bighorn will benefit from the improvement of habitat for this species. Intense use may put cultural resources at risk from damage and vandalism, and increase the risk of spreading invasive weeds into and out of the project area by way of seed transport, such as clinging to shoes, clothing, pets, and motor vehicle and bicycle tires. This project will install better signage directing recreationalists where to go, which will improve recreational access while preventing additional weed invasions and protecting Native American cultural heritage.

This place tells a story about the people who made their homes in this area over 2,000 years ago. But that story is diminished with sediment deposition and fire threats that are damaging cultural resources and inhibiting the ability of the descendants of Native Americans to continue to visit their cultural heritage sites and continue ceremonial traditions. This project will protect these resources for generations to come and restore the historic viewshed of this amazing site.

Relationship to prior approved phases or related SNPLA projects and description of anticipated phases:

Previous actions in this area have included treating tamarisk to reduce fuel loads. Other noxious weeds have also been treated within the canyon. However, there has not historically been

sufficient funding to holistically address the fuels treatments, weed treatments, and restoration that are required to fully restore the area.

This project will build upon existing fuels treatments, recording of cultural sites, and sedimentation studies. It will provide the BLM the ability to fully realize each of the project components, which will provide sustainability to these actions. For example, having access to funding to treat all the invasive species in the canyon for multiple years will increase the likelihood of eradication of these species, providing a better environment for restoration.

A potential future phase of the project could include NEPA and requests for future funding to address the sediment accumulation, although this would be subject to recommendations from the final sedimentation study and report, consultations with the Moapa Band of Paiutes, and estimated costs.

Project Deliverables:

Primary Deliverables:

- Agreement with U.S. Geological Survey to conduct high resolution topography and geomorphology study of select archaeological sites in Arrow Canyon.
- Agreement with U.S. Geological Survey to conduct a sedimentation study.
- Agreement with National Park Service for hazardous fuels and weed treatments.
- Contract to complete an ethnography for the Moapa Band of Paiutes.
- Contract to complete field surveys and report of archeological resources.
- Contract a Tribal Liaison and Monitor.
- Nomination to the National Register of Historic Places.
- Contract interpretive sign design.
- Complete fuels/weeds treatments on 45 acres.
- Complete restoration treatments on 45 acres.

Anticipated Deliverables:

- Report on archeological sites within Arrow Canyon. (contractor)
- Ethnography report completed. (contractor)
- Monitor treated sites for resprouting of treated weeds or new invasions of weeds, and re-treat as needed. (NPS)
- Complete restoration of treated sites as needed, including planting of native plants or seeds, to prevent reinvasion and restore native habitat. (NPS)
- Three separate reports published by USGS on the various aspects of the sedimentation study. (USGS)
- Depth to groundwater at Arrow Canyon groundwater monitoring sites published on the USGS NWIS database. (USGS)
- Recommendations concerning potential removal of sediment, based on studies (USGS).
- Install kiosks with interpretive signage (contractor).
- Provide connectivity with adjacent projects, especially extensive restoration efforts along the Muddy River.

Standard Deliverables:

- Develop scope of work for contracts/agreements and complete the necessary process and approval for entering into each contract/agreement.
- Complete an Environmental Assessment (EA) for project components not covered by NEPA (mastication of tamarisk, some restoration actions), and a Minimum Requirement Analysis for project components in wilderness.
- Public scoping for NEPA documents.
- Prescribed burn plan for hazardous fuels treatment.
- Pesticide use plan and pesticide application report for herbicide treatments.
- Collect local, native seeds for restoration needs.
- Propagate or procure native plants for restoration needs.

Project Timeframe:

Year One:

- Complete Environmental Assessment and Minimum Requirement Analysis.
- Consultation with tribal leaders for Moapa Band of Paiutes.
- Complete an agreement with U.S. Geological Survey to conduct high resolution topography and geomorphology of select archaeological sites in Arrow Canyon, and to conduct sedimentation studies.
- Complete or modify an agreement with National Park Service for Exotic Plant Management Teamwork for hazardous fuels and weed treatments.
- Complete a contract or agreement for an ethnographer to document cultural history from tribal representatives.
- Complete a contract for cultural resource surveys and reports; contract will include requirement to hire tribal monitors.
- Monitor water table.
- Create fuel breaks around sensitive cultural features prior to hazardous fuels treatment.
- Treat weeds and hazardous fuels in upper half of the wash.
- Plant native vegetation in upper half of wash.

Year Two:

- Prepare and submit a nomination to the National Register of Historic Places for long-term preservation of the critical cultural property and resources in Arrow Canyon.
- Monitor water table.
- Treat weeds and hazardous fuels in lower half of the wash, re-treat sprouts in upper half.
- Plant native vegetation in lower half of wash.
- Maintain/monitor native vegetation plantings in upper half of wash.
- Work with tribal liaison and archaeologist for kiosk design. Contract kiosk design.

Year Three

- Monitor water table.
- Re-treat weed sprouts as needed.
- Maintain/monitor native vegetation plantings.

Year Four:

- Monitor water table.
- Re-treat weed sprouts as needed.
- Monitor native vegetation plantings.
- Install kiosks.
- Conclude NPS agreement.

Year Five:

- Submit National Historic Register nomination.
- Continue monitoring restoration and weed treatments, document in management report.
- Conclude USGS agreement upon publication of study results.
- Develop management recommendations based on study results.
- Closeout project.

Level of Project Readiness for Implementation:

NEPA has been completed for most project components, including Section 106 and Section 7. BLM, as an in-kind match, will write a new Environmental Assessment to cover proposed restoration work that has not yet been completed. This process can begin as soon as the project officially begins, which means that the project can begin very quickly once funded.

Monitoring wells will have been installed already in the wash to establish baseline data to guide selection of plant materials for restoration, and to detect changes in depth to the water table as a result of restoration actions.

Many cultural resources in Arrow Canyon have already been documented, so there is awareness of sensitive areas, and this will also facilitate recording the sites for the National Historic Register nomination.

Tamarisk treatments have been conducted in previous years, considerably reducing the fire hazardous fuel load, but additional treatments are needed.

Objective 1. Cultural Resources: Investigate Impacts of Flooding on Cultural Artifacts

The Arrow Canyon dam was constructed by the Civilian Conservation Corps in the 1930s to control downstream flooding in the city of Moapa. Over the next 90 years, repeated flooding in the wash has been held back by the dam, resulting in longer retention of water and increased deposition of sediment in the wash upstream of the dam. Large quantities of sediment have accumulated over the years, which gradually buries cultural artifacts. This site is still an important spiritual place to the Moapa Band of Paiutes, and it is an integral part of their cultural heritage to visit Arrow Canyon and visit their ancestral history.

In May 2012, the Bureau of Reclamation conducted a “Dam failure and flood inundation study” and a “Downstream Hazard Potential Classification.” While the study did not evaluate the integrity of the dam, it did model the flooding potential without the presence of a dam in case of a dam failure. Based on these documents and the historic value of the feature, dam removal is not recommended at this time.

Two studies will determine the accumulation rate, depth, and age of sediment to assess sediment impact on cultural resources and inform the feasibility of potential sediment removal.

1. **Topographic Study:** The first study will use a ground-based light imaging detection and ranging (LIDAR) scanner to produce high resolution imaging of important cultural resources at the ground surface to determine impacts of sedimentation. This study will inform sediment removal potential.

The objectives for this study are to:

- a. Document the current topography of selected sites in Arrow Canyon.
 - b. Quantify geomorphic change to assess sedimentation rates and the vulnerability of archeological sites upstream of Arrow Canyon Dam by tracking rates and locations of topographic change between 2021 and 2024.
 - c. Qualitative investigation of links between intra-annual precipitation and site change.
2. **Sedimentation Study:** This study will be based on work which has already been funded through separate sources and consists of several separate tasks that build on each other:
 - a. Calculate volume of sediment trapped behind dam: The BLM SNDO has previously funded the drilling of wells in the accumulated sediment and the digitization of a 1934 USGS contour map. In this part of the study the USGS will subtract the pre-dam elevation surface from the present-day elevation surface to estimate the total volume of sediment. The 1934 map of potential dam sites will be used as the pre-dam elevation surface. The accuracy of this map will be evaluated based on available well logs. Ground-based LIDAR data will have been collected as part of the topographic study mentioned previously and provide an accurate present-day elevation surface. The two surfaces will be subtracted from each other to provide a volume of sediment. The results and a discussion of the uncertainty will be published in a USGS report, with the data published in a data release.
 - b. Determine effect of potential sediment removal on flood scouring of artifacts: Using the 1934 elevation map and the LIDAR data acquired in the previous task, numerical models will be developed using HECRAS to estimate the depth of water that would be observed during floods of various probabilities (the ten-year flood, the hundred-year flood, etc.) with and without the sediment trapped behind the dam. The modeling results will be published in a USGS report. The implications of the model for specific artifacts of interest to the BLM will be described in a USGS Restricted-File Federal Interagency Report to avoid publishing the locations of sensitive sites.
 - c. Investigate how rapidly sediment would accumulate if trapped sediment was removed and determine if sediment is still accumulating today: Historic records tell us that sediment began to accumulate behind the dam as early as 1939. Sediment cores were analyzed for Cs-137, an isotope not found in the earth's atmosphere prior to nuclear testing. The difference between the depth at which the original gravel surface of the wash is encountered and the deepest depth at which Cs-137 is detected was used to determine the amount of sediment accumulated.

Deposition of cesium-137 from rainfall correlates linearly throughout the earth's latitudinal zones and is considered a strong temporal marker. Therefore, sediment samples were collected from cores drilled in selected locations behind Arrow Canyon Dam and analyzed for cesium-137 concentrations. Two cores were collected at depths that correspond to pre-dam streambed elevations along Pahranaagat Wash of about 20 feet and 12 feet, and one additional core was collected between these sites and above the historic streambed at a depth of about 10 feet. Samples were processed, analyzed, and a chronology of sediment accumulation was developed and compared to limited discharge records for Pahranaagat Wash and precipitation data measured in the area. Cesium-137 was first encountered at a depth of 9 to 10-feet with peak values between 4 and 6-feet below land surface at a concentration of one picocuries per gram. These depths suggest that sediments have accumulated approximately 10 feet since 1952 with spikes in cesium-137 concentrations that may reflect peak flows. In addition, four years of groundwater monitoring data will be collected. The stability of the sediment and the areas where deposition is expected will be modeled, using the flood inundation model, the LIDAR data, and the monitoring data as inputs. A USGS report synthesizing the results will be prepared, and the data will be published in a data release. (The BLM SNDO has already funded the collection of Cs-137 data from sediment cores as described above.) Determine water level below the original wash surface to evaluate potential re-vegetation plans after sediment removal: Existing wells completed in the sediment trapped behind the dam are dry, so the depth to groundwater at the site is not known. A well will be installed through the trapped sediment and into the coarse gravel below to determine the depth to groundwater. An air rotary drill rig will be used to sink a 10" casing through the sediment, then an air hammer drill rig will be used to drill into the gravel. Four quarterly measurements of depth to groundwater will be made and published on the USGS NWIS database. The depth to groundwater information will be used in selecting plants for the ecological restoration efforts after the proposed sediment removal.

Objective 2. Cultural Resources: Nominate Site to National Register of Historic Places

Arrow Canyon has an outstanding and diverse collection of prehistoric and historic resources. Some of these resources have been documented over time, while others remain undescribed or are in informal reports. A cultural contractor will be obtained to fully inventory Arrow Canyon and associated features and drainages and compile a report detailing any new findings, along with existing reports and any findings from LIDAR imaging, to submit to BLM. At least one tribal monitor and one tribal liaison will also be funded in order to support involvement of the Moapa Band of Paiutes in this process. This canyon has cultural and spiritual meaning to them.

1. **Ethnography:** The BLM will hire a contractor to complete an ethnography of the Moapa Band of Paiutes, interviewing members of the Tribe, with permission, to record and preserve their cultural connection to this place.
2. **Nomination to National Register of Historic Places:** The BLM will hire a contractor to compile a nomination package to add Arrow Canyon to the National Register of Historic

Places in order to provide long-term preservation of the critical cultural property and resources in Arrow Canyon. BLM will submit the nomination package.

3. **Interpretive Material:** The BLM will contract out design of interpretive signs for the area, with Native American consultation and the BLM archaeologist, and install signs and kiosks to explain the background of the project, interpret natural resources, encourage visitors to stay on trails, and explain how to protect resources. Content of these signs would be sensitive to the need to protect the location of sensitive cultural resources.

Objective 3. Natural Resources: Remove Invasive Species and Restore Native Species

The dam results in water being held behind the dam for extended periods of time, where it normally would have drained immediately into the Muddy River. The standing water has created an unusual habitat conditions allowing non-native plants to take over Arrow Canyon. These plants, including dense thickets of tamarisk and scotch thistle, create a huge risk for fire, which could damage petroglyphs and other sensitive cultural resources. This dense pocket of invasive species also sends seeds downstream making treatment of invasive species in the highly sensitive Muddy River watershed a continuing challenge.

Steps to remove invasive species and restore native species include:

1. **Hazardous Fuel Reduction:** Some of the larger stands of tamarisk will be removed by prescribed fire, using broadcast burning and/or cut and pile burning, and/or by mechanical means using a tractor-mounted masticator, power saws or hand-operated tools. Tamarisk slash not destroyed by burning will be physically removed from the area to prevent rooting of stems and to reduce the risk of damage to the dam and restoration plantings during flash flooding. Cut stumps will be treated with herbicide to discourage sprouting.

To protect the petroglyphs on canyon walls from damage due to excess heat during prescribed burning, a minimum 10 foot wide fuel break will be constructed by cutting and removing tamarisk by hand. The petroglyphs on boulders in tamarisk infested areas will be protected by hand cutting and removing vegetation at least 10 feet away. The cut brush will be moved into the burn area and the remaining stumps treated with herbicide.

2. **Invasive Species Control:** Control of invasive and noxious weeds will include chemical (herbicide) or mechanical (pulling, cutting or grubbing) methods, or a combination of these. Only herbicides approved for use on BLM lands and labeled for use in riparian/aquatic sites will be applied. Monitoring and retreatment will be necessary for several years to control tamarisk sprouts and any regrowth or weed seedlings. Invasive species will be removed, and natural vegetation restored throughout a 45-acre area to reduce wildfire risk and damage to cultural resources, and to create a more resilient native plant community.

Wilderness character will be preserved by avoiding any mechanized equipment use inside the wilderness area boundary. Weed treatments will be done with hand tools and backpack herbicide sprayers if deemed to be the minimum tool during the minimum requirement analysis (MRA).

Restoration: Restoration will include planting of native species such as sacaton, saltgrass, seepwillow, and desert willow in the riparian zone, and mesquite, desert willow, acacia and creosotebush in the upland floodplain zone. A plant list has been developed using separate funding and seed collection will be done in similar areas as close to the site as possible in order to maintain local genetics. Plantings will need to be caged or fenced for the first 2-3 years to protect them from browsing by wildlife or livestock and from flood-carried debris.

Future Operations and Maintenance:

The BLM is responsible for future operations and maintenance costs.

Partnerships and/or contributed funds:

Estimated value of in-kind contributions for the project is approximately \$122,473. This is a 4% project match. This includes:

- Volunteer labor – Restoration crews would consist of volunteers (from a conservation corps or similar non-profit organizations) who receive a stipend for remote living expenses but not a salary. Estimated value would be 5 volunteers per crew, each contributing 40 hours per crew week for approximately 10 weeks over the term of the project, for a total of 2,000 hours, at \$25.43 per hour, total estimated value \$50,860.
- BLM in-kind Environmental Assessment – BLM will develop an Environmental Assessment for project components not currently covered by NEPA. This is anticipated to have an in-kind value of \$75,000. See justification (attached to the physical nomination submission).

The remainder of this page intentionally blank.

Funding Summary and Budget Detail:

ROUND 18			
CONSERVATION INITIATIVES NOMINATION			
ESTIMATED DIRECT COSTS & KEY MILESTONES			
Project Name:	Arrow Canyon Project	Date prepared:	1/11/2021
		Agency:	Bureau of Land Management
Project #		Priority #:	
Prepared by:	Lara Kobelt	Phone #:	702-515-5022
Title/position:	Natural Resource Specialist		
1 Planning & Environmental Documentation		\$0	0.00%
Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)			
2 FWS Consultation - Endangered Species Act		\$0	0.00%
Direct expenses or FWS consultation, if required.			
3 Direct Federal Labor to Implement Project (Payroll)		\$1,034,800	35.96%
For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.			
4 Project Equipment and/or Supplies and Materials		\$64,500	2.24%
Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.			
5 Travel and Per Diem for Implementation		\$0	0.00%
Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below			
6 Official Vehicle Use (vehicles with Federal license only)		\$17,923	0.62%
Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost			
7 Training (required to implement the project)		\$0	0.00%
Includes training essential/necessary for implementation of the project.			
8 Contracts, Grants, and/or Agreements		\$1,633,000	56.75%
CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan.			
9 Other Necessary Expenses		\$127,550	4.43%
(See Appendix B-11)			
Total requested/estimated budget		\$2,877,773	100.00%
10 Estimated agency or partner contribution		\$122,473	
Total Estimated project value		\$3,000,245	

Performance Measures:

Strategic Objective 1: Conserve and Restore Natural Resources. Maintain or increase the quality of natural resources and protect their ecological integrity and sustainability.

Outcome 1. Natural Resources: Remove Invasive Species and Restore Native Species

- *Output (Primary Deliverable):* Complete fuels/weeds treatments on 45 acres.
 - **Performance measure F1:** 45 acres of hazardous fuels treated – non-wildland urban interface (WUI).
 - **Performance measure H9:** 45 acres of invasive plant species treated or restored.
 - **Performance measure H10:** 45 acres of invasive plant species surveyed, inventoried or monitored.
- *Output (Primary Deliverable):* Complete restoration treatments on 45 acres.
 - **Performance measure H2:** 1.5 miles of riparian stream or shoreline habitat treated, enhanced or restored.
 - **Performance measure H3:** 1.5 miles of riparian stream or shoreline habitat surveyed, inventoried or monitored.
 - **Performance measure H6:** 45 acres of wetland/riparian habitat treated, enhanced or restored.
 - **Performance measure H7:** 45 acres of wetland/riparian habitat surveyed, inventoried or monitored.

Strategic Objective 2: Preserve Cultural and Historical Resources. Document, preserve, and interpret cultural resources.

Outcome 2. Cultural Resources: Investigate Impacts of Flooding on Cultural Artifacts

- *Output (Primary Deliverables):* Enter into an agreement with U.S. Geological Survey to conduct high resolution topography and geomorphology study of select archaeological sites in Arrow Canyon; enter into an agreement with U.S. Geological Survey to conduct a sedimentation study.
 - **Performance measure O4:** A minimum of 3 scientific/technical reports produced.

Outcome 3. Cultural Resources: Nominate Site to National Register of Historic Places

- *Output (Anticipated Deliverable):* Enter into or modify an agreement with National Park Service for Exotic Plant Management Team for hazardous fuels and weed treatments.
 - **Performance measure C1:** A minimum of 10 cultural or historic sites or structures stabilized or protected (through fuels treatments to reduce fire risk around panels and artifacts).
- *Output (Primary Deliverable):* Hire contractor to complete field surveys and report of archeological resources.
 - **Performance measure C2:** A minimum of 100 cultural/paleontological artifacts protected.
 - **Performance measure C3:** A minimum of 140 acres of cultural/paleontological artifacts surveyed, inventoried or monitored.

- *Output (Anticipated Deliverable):* Final report on archeological sites within Arrow Canyon. (contractor).
 - **Performance measure O4:** A minimum of 1 scientific/technical report produced.
- *Output (Anticipated Deliverable):* Final ethnography report completed. (contractor).
 - **Performance measure O4:** A minimum of 1 scientific/technical report produced.
- *Output (Primary Deliverable):* Contract interpretive sign design and install in kiosks.
 - **Performance measure O6:** A minimum of 3 interpretive signs produced and installed in kiosks.

Strategic Objective 3: Promote Project Connectivity and Sustainability. Integrate and connect sustainable projects across agencies, landscapes, and previous projects that are sustainable within the outdoor environment.

Outcome 4. Provide Connectivity to Prior and New Projects.

- *Output (Anticipated Deliverable):* The Muddy River Floodplain Restoration Project, another BLM Conservation Initiative submitted for Round 18 funding, is downstream from Arrow Canyon. The watershed quality of Arrow Canyon impacts the Muddy River, where not only does the BLM have significant restoration input, but other agencies also have invested heavily in this area. The Muddy River feeds Lake Mead, which is a primary water source for southern Nevada. This project builds upon past fuels treatments in Arrow Canyon and would protect current and future restoration work downstream in the Muddy River by preventing noxious weeds from traveling into those areas.
 - **Performance measure:** Although there is no specific performance measure for this output, the connectivity between this project and the Muddy River Floodplain Restoration project would result in increased mutual benefit from each project.

Executive Committee Strategic Plan Values:

The SNPLMA values of sustainability, connectivity, and community, will be supported by this project through the protection and documentation of cultural resources, fuels treatments to reduce fire risk, and restoration of important wildlife habitat. Ties to these values are demonstrated in applicability of the project to the goals of the SNPLMA Strategic Plan. Map 3 shows connectivity to other projects in the area, including another SNPLMA project (Muddy River Riparian Restoration) proposed for Round 18.

1. Goal 1: Sustain the quality of the outdoor environment by conserving, preserving, and restoring natural, cultural, and historical resources.

The Arrow Canyon project will help BLM to make management decisions about how to handle the impacts sedimentation is having on the cultural resources in the canyon, nominate the site to the National Register to preserve the longevity and integrity of Arrow Canyon, and remove hazardous fuels, treat invasive species, and restore native species in order to protect cultural resources and to improve wildlife habitat and watershed health.

Arrow Canyon is a tributary to the Muddy River, which feeds Lake Mead, which supplies Las Vegas with water. The connection of Nevadans to their water source is essential and

undeniable in the arid Mojave Desert. The health of these ecosystems is inseparable, and so the holistic protection of the Lake Mead watershed is arguably the most important connection in southern Nevada.

An ethnography of the Moapa Band of Paiutes will help to connect stories and traditions from the ancestors of the people who lived in and around Arrow Canyon to the important cultural resources, which paints a broader and more informative picture of Arrow Canyon.

The nomination of Arrow Canyon to the National Register will preserve both the durability of the site and the relevancy of Arrow Canyon for generations to come. Removal of the weeds and a thorough restoration process with intensive monitoring will help Arrow Canyon to remain resilient to reinvasion of weeds while preventing fire damage to petroglyphs and other archeological resources within the canyon. Tribal monitors will contribute to additional collaboration between BLM and the tribes.

2. Improve the quality of life for all public in urban and rural communities by enhancing recreational opportunities that connect people with the outdoor environment.

This project will provide better signage for recreationalists and increase ability of tribal members to access their traditional cultural sites. Moapa, the closest town to the project area, is a rural community in southern Nevada where people live who appreciate the accessibility of adjacent public lands where they can recreate. Restoration of this area will expand opportunities for recreation, including better access to bird watching, wildflower viewing, and appreciation of archeological sites.

Compliance with Departmental Priorities, Strategic Goals, Executive Orders (EO), and Secretarial Orders (SO):

Relationship to The Secretary of the Interior's Top Ten Priorities:

1. *Creating a conservation stewardship legacy second only to Teddy Roosevelt.*
The project will improve land and water health throughout the watershed. Treating source populations of invasive species to slow downstream impacts on important water sources. Implementation of this project will restore native plant communities and ecosystem. health and decrease the threat of large wildfires.
 2. *Restoring trust with local communities.*
The project will be carried out in close coordination with the Moapa Band of Paiutes. Tribal monitors from the Moapa Tribe will be hired to help monitor archeological surveys, fuels reduction, invasive species removal, and restoration work.
 3. *Ensuring sovereignty means something.*
The project will help to improve preservation of cultural history. In collaboration with the tribes BLM will improve preservation and decrease threats to cultural resources
- Executive order #13855: Promoting Active Management of America's Forests, Range Lands to improve conditions and reduce wildfire risk.

-
- DOI Priority #1: Create a conservation stewardship legacy second only to Teddy Roosevelt.
 - See above.
- DOI Priority #2: Sustainably develop our natural resources.
 - NA
- SO No. 3347: Conservation Stewardship and Outdoor Recreation
 -
- SO No. 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes and Territories
 -
- SO No. 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors
 -
- SO. 3366: Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior
 -
- SO No. 3370 Improving Conservation Stewardship and Increasing Public Access to Urban National Wildlife Refuges
 -
- SO No. 3372 Reducing Wildfire Risks on Department of the Interior Land Through Active Management
- SO No. 3374 Implementation of the John D. Dingell, Jr. Conservation, Management and Recreation Act
 -
- SO No. 3376 Increasing Recreational Opportunities through the use of Electric Bikes

Ranking Criteria:

- *Criteria #1: The nomination supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability*
 - Arrow Canyon is within an Area of Critical Environmental Concern and partially within a wilderness area. It also drains into the Muddy River, which is a tributary to Lake Mead. This project will take severely degraded habitat within Arrow Canyon and restore it to native vegetation, which will improve habitat throughout the above-mentioned protected areas and provide a healthier connection to the Muddy River Watershed.
 - This project will improve habitat for the Mojave desert tortoise. This project is within Critical Habitat for the Mojave desert tortoise.
 - 45 acres of invasive species will be removed and controlled through repeated application.
 - In addition to the desert tortoise, this project will improve watershed quality for the Muddy River by removing a huge source population for tamarisk, invasive thistles, and other weeds, which will improve restoration success of other projects within the watershed.
 - This project will remove invasive species and restore native species, which

creates resiliency of plant communities and wildlife habitat to climate change impacts.

- Extensive cultural surveys will take place through this project to fully document the resources in Arrow Canyon, and to compile those reports with existing literature in order to centralize information about this cultural resource.
 - This project will nominate Arrow Canyon to the National Register of Historic Places.
 - There are already dedicated site stewards involved in the protection and monitoring of Arrow Canyon – these site stewards will continue to be involved throughout the project and after the project is complete.
 - Invasive species, including dense stands of tamarisk, will be removed, which will reduce the threat of fire damage to the archeological resources within Arrow Canyon. This project will also study how cultural resources are being impacted by sedimentation and how logistically feasible it would be to remove the sediment.
 - Tribal monitors and a tribal liaison will be hired from the local tribe to help BLM to respect and communicate tribal members' wishes when conducting surveys and during the nomination process to the National Register. This project will fund an ethnography of Arrow Canyon in order to record and preserve the Moapa Band of Paiutes' use of the site and religious traditions.
 - New information kiosks will be designed and installed (with input from tribal liaison) in order to better inform visitors, and to provide more information in order to protect sensitive resources. This will include better area maps and regulations about OHV use and other recreational activities.
 - BLM will install better signage at the entrances to the area so that people recreating in this popular visitation area will know what they can and cannot do in wilderness, an ACEC, and how to respect cultural sites.
 - Monitoring wells are looking at the depth of water within Arrow Canyon during flooding and longer-term inundation, and the sedimentation studies will help to inform how the dam will hold up over time to increasing sediment levels, which impacts downstream water quality in the city of Moapa.
- *Criteria #2. The nomination promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support*
 - This project will document, record, report on, and submit the cultural resources found in this area to the National Register in order to preserve the history of this area for future generations. The ethnography of Arrow Canyon will record the history as told by the ancestors of the Native Americans who left so much history in this canyon. BLM and NPS will remove invasive weeds and restore native xeroriparian habitat within Arrow Canyon, which will improve watershed health and resiliency over the long term, reduce fire risk, and protect cultural resources. This project will also enhance the natural quality of wilderness characteristics in the Arrow Canyon Wilderness Area.
 - Arrow Canyon has become completely overrun with tamarisk, an invasive weed. This project will remove tamarisk, along with other noxious weeds present in the canyon, and restore native species. This will create functional wildlife habitat for

the threatened Mojave desert tortoise and the desert bighorn sheep, which is so important to the cultural significance of this area. Removing the tamarisk will also protect cultural resources from the threat of fire and the nomination of this area to the National Register will provide sound documentation of how important Arrow Canyon is for Native Americans and their cultural heritage.

- This area is an important place to study cultural resources, and will be for generations to come. It is important to Native American descendants of the people who lived in Arrow Canyon, and will continue to serve as an important religious and ceremonial site. Successful restoration of Pahrnagat Wash in Arrow Canyon will create a healthier watershed, which extends to important drinking water sources including the Muddy River. The nomination of this site to the National Register will forever preserve its legacy as one of the most important cultural sites in southern Nevada.
- *Criteria #3. The nomination promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites.*
 - Kiosks and better maps will increase public information about how to help protect this sensitive area. Involving the tribe will help to connect communities by allow members of the Moapa Band of Paiutes to share why this area has so much meaning for them, and how other visitors can help to preserve this cultural history.
 - Outreach involving how to use this area respectfully will be a huge part of this project. Signs will incorporate information about how off-highway vehicle users, along with other recreationalists, can help to protect other resources by staying on roads, and by using maps that include the wilderness boundaries.
 - This area is an important place to study cultural resources and will be for generations to come. It is important to Native American descendants of the people who lived in Arrow Canyon and will continue to serve as an important religious and ceremonial site. The nomination of this site to the National Register will forever preserve its legacy as one of the most important cultural sites in southern Nevada.
- *Criteria #4. The nomination promotes sustainability, connectivity, and community by connecting people to nature and recreational opportunities by uniting communities with important places across the landscape. The nomination enhances partnerships t promote cooperation and collaboration.*
 - This project is a collaboration between the BLM and the NPS, who both have interests in protecting cultural resources and improving natural resource conditions within Arrow Canyon to prevent downstream impacts in Lake Mead National Recreation Area.
 - Extensive collaboration with the Moapa Band of Paiutes is a huge part of this project and will greatly contribute to the successful outcome of this project.
 - Arrow Canyon has a dedicated stewardship group that will continue to support this project and be involved through these project components. The stewardship group will also continue to be involved after the project is complete.

- *Criteria #5. The nomination has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project*
 - Restoration crews would consist of volunteers (from a conservation corps or similar non-profit organization) who receive a stipend for remote living expenses, but not a salary. Estimated value would be 5 volunteers per crew, each contributing 40 hours per week for approximately 10 weeks over the term of the project, for a total of 2,000 hours, at \$25.43 per hour, with a total estimated value of \$50,860.
 - BLM Southern Nevada District will complete new NEPA documentation and Minimum Requirement Analysis in-house for project components not currently covered under NEPA. Given Section 7 and Section 106 requirements and the likelihood for public comment, the value of this component has an estimated total value of \$75,000. See justification (attached to the physical nomination submission).

- *Criteria #6 Advances the Agency/Entity Priorities. The proposed project specifically identifies what and how the nomination/project meets the priorities and strategic goals for their respective agency.*
 - Yes

- *Criteria #7. Consistency with Executive (EO) and Secretarial Orders (SO). The proposed project specifically identifies what and how the nomination/project meets the EO and/or SOs.*
 - Yes

The remainder of this page intentionally blank.

Maps:

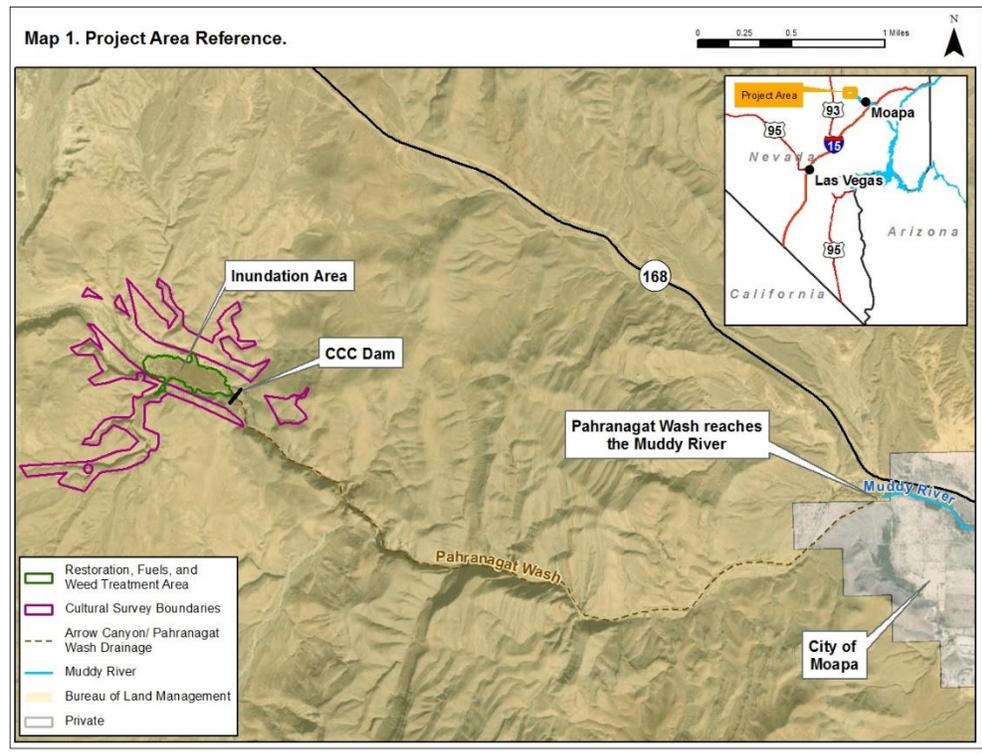


Figure 1. Project area

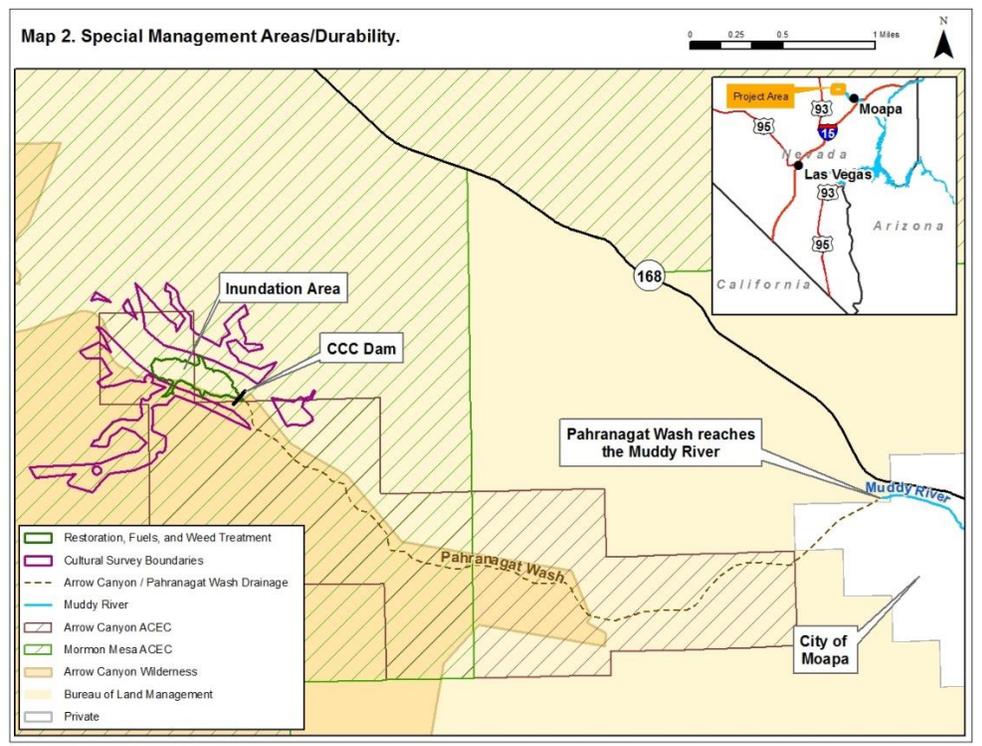


Figure 2. Management responsibility

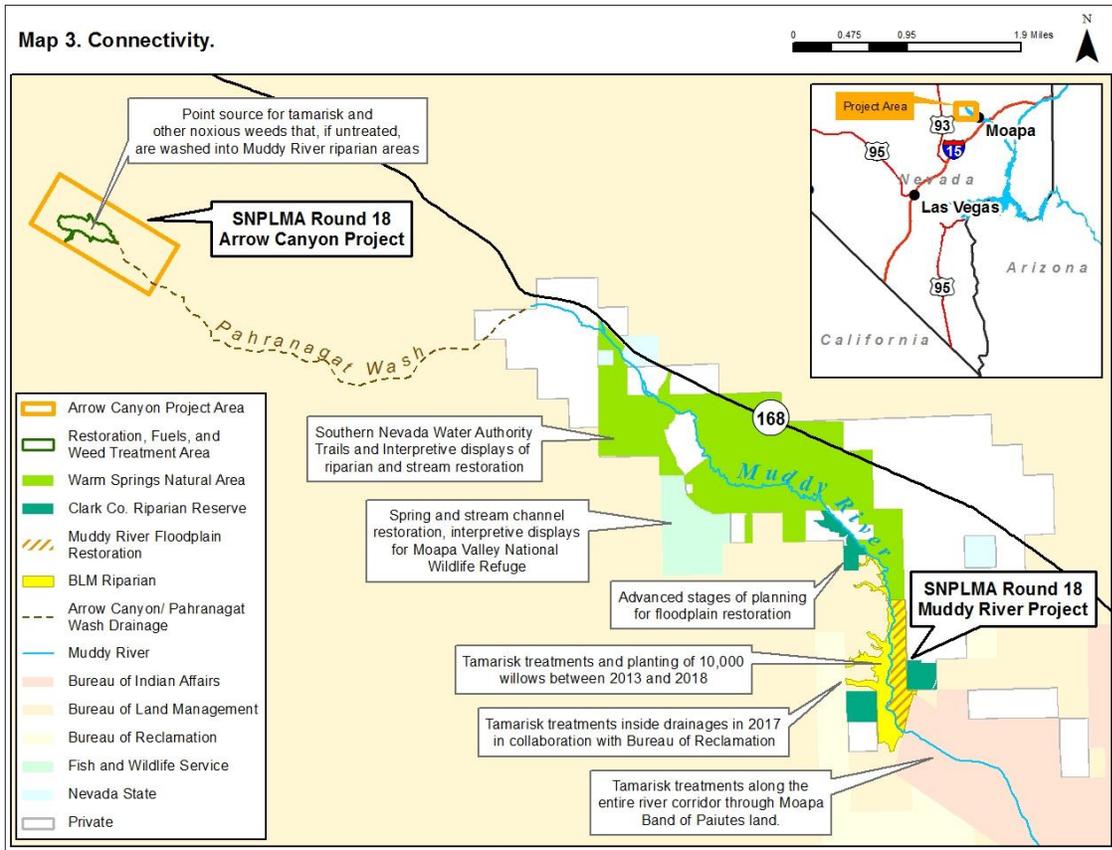


Figure 3. Connectivity to other projects in the area.

Photos:

Figure 4 Tamarisk invasion of Arrow Canyon creates fire risk.



Figure 5 Altar Rock photo taken June 11, 2002.



Figure 6 Altar Rock, photo taken June 29, 2018. Note increase tamarisk and sediment loading.

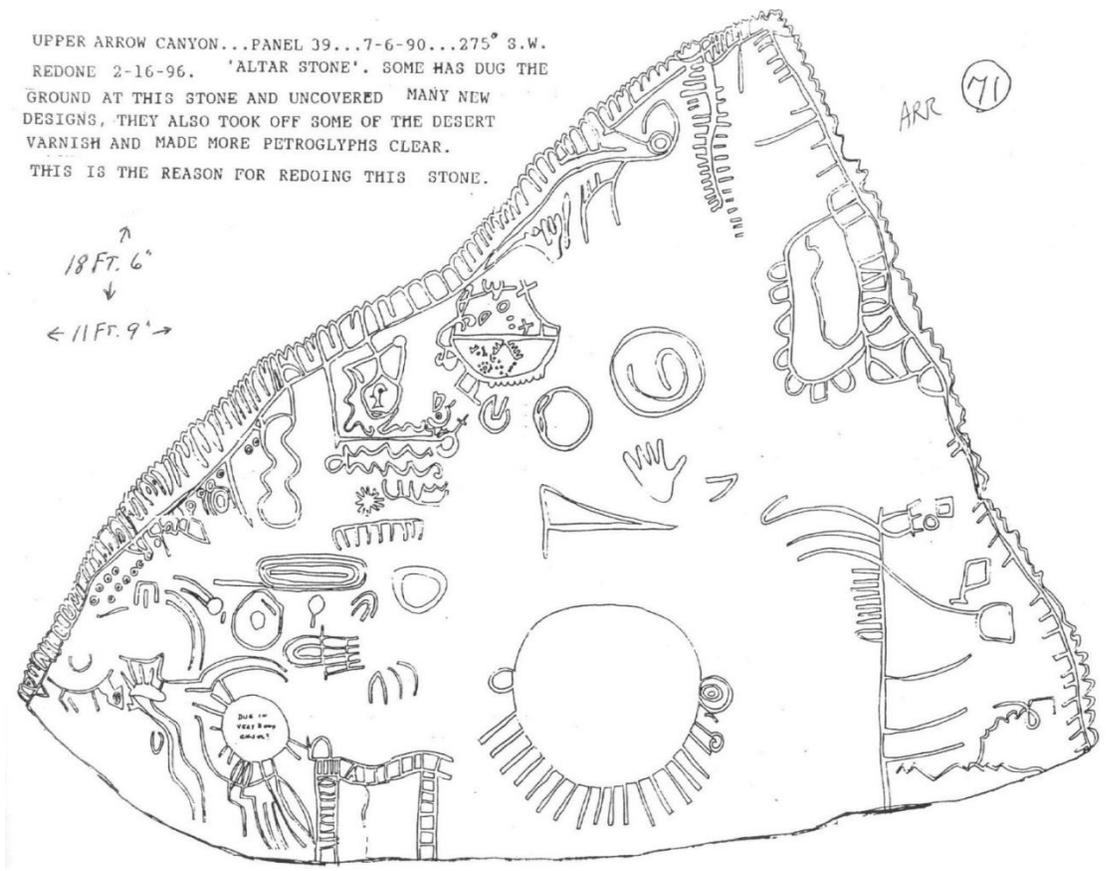


Figure 7 Sketch of multiple Petroglyphs on Altar Rock.

Letters of Support:

1. Las Vegas Band of Paiutes
2. Friend of Nevada Wilderness
3. Southern Nevada Conservancy
4. Center for Biological Diversity
5. Nancy Hartgold
6. Jim Boone
7. Anne McConnell
8. Bruce Holloway
9. Carol Shimer
10. Chuck Williams
11. Elaine Holmes
12. Leigh Grench
13. Nancy Gentis
14. Nina Bowen
15. Pamela and Quentin Baker

1. Las Vegas Paiute Tribe



Las Vegas Paiute Tribe

Curtis Anderson
Tribal Chairman

September 1, 2020

Robert Wandel
Assistant District Manager
SNPLMA Division
Bureau of Land Management
4701 N. Torrey Pines Dr.
Las Vegas, NV 89031

Letter of Support For: Protection of Arrow Canyon Cultural Property and Habitat Restoration SNPLMA Round 18 – Conservation Initiatives

Dear Mr. Wandel,

On behalf of the Las Vegas Paiute Tribe (LVPT) I am pleased to write a letter of support for the proposal cited above. This proposal falls within the conservation stewardship initiative due to sediment deposits from flooding and the risk of catastrophic wildfire in dense invasive vegetation in and around Arrow Canyon. Both of these issues have raised concerns about the fate of Arrow Canyon's significant cultural and natural resources.

Through this proposed study, the Bureau of Land Management (BLM) will study how continual flooding is impacting cultural resources within Arrow Canyon and will restore 45 acres of Pahrangat Wash in Arrow Canyon over a period of 5 years. Restoration will improve wildlife habitat, protect unique and abundant cultural resources threatened by wildfire and potentially by flooding related sedimentation, as well as improve downstream water quality in the Muddy and Virgin River watersheds. The fire risk will be drastically lowered by removing invasive species and restoring native plant communities. In addition, a sedimentation and inundation study will determine the nature of sediment accumulation in the canyon and the impacts to cultural resources. Finally, the LVPT understands that Arrow Canyon's cultural resources will be documented and nominated as an archaeological district to the National Register of Historic Places.

In closing, Arrow Canyon is culturally significant to the LVPT because it is the evidence that Indigenous People made their homes in this area over 2,000 years ago. The historical significance

of this area is being diminished with sediment deposition and fire threats that are damaging cultural resources which connects Indigenous People to this place. The implementation of this project would protect these resources of this amazing site for generations to come.

Sincerely,

A handwritten signature in cursive script, appearing to read "Curtis Anderson", with a long horizontal flourish extending to the right.

Chairman Curtis Anderson

2. Friends of Nevada Wilderness

August 18, 2020



FRIENDS of NEVADA WILDERNESS

Robert Wandel
Assistant District Manager - SNPLMA Division
Bureau of Land Management
4701 N. Torrey Pines Dr.
Las Vegas, NV 89031

RE: Support Letter for "Protection of Arrow Canyon Cultural Property and Habitat Restoration.
Category (Conservation Initiative).

Dear Robert:

Friends of Nevada Wilderness wishes to express our support for the Protection of Arrow Canyon Cultural Property and Habitat Restoration project. We have long been supportive of protection of the Wilderness, recreational and cultural resources and properties in the Arrow Canyon region. We are very supportive of the BLM working closely with the Maopa Band of Pauties on this important project.

We would like to see Arrow Canyon's cultural resources be documented and nominated as an archaeological district to the National Register of Historic Places.

Should you have any questions or need additional information please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Shaaron Netherton".

Shaaron Netherton
Executive Director
Friends of Nevada Wilderness

3. Southern Nevada Conservancy

August 21st, 2020



Robert Wandel
Conservation Initiatives Program Manager
SNPLMA Division
Bureau of Land Management
4701 N. Torrey Pines Dr.
Las Vegas, NV 89130

Re: SNPLMA Round 18 Grant Proposal – Protection of Arrow Canyon Cultural Property and Habitat Restoration

Southern Nevada Conservancy would like to express our support for the Protection of Arrow Canyon Cultural Property and Habitat Restoration proposal authored by the Bureau of Land Management.

Arrow Canyon is rich in cultural resources including petroglyphs that represent the history and culture of the Moapa Band of Paiutes. Researching and studying the impacts of the dam, its impacts on the cultural resources and how invasive plants have gained a foothold in the area will provide land managers with the information they need to maintain the canyon's environmental integrity. Safeguarding the protection of surrounding petroglyphs also ensures that Americans of all walks of life will be able to appreciate them and their cultural significance for many years to come.

Southern Nevada Conservancy values the goals sought to be achieved through this proposal and applauds the actions by the BLM to enact a plan to protect the natural and cultural values of Arrow Canyon.

Please feel free to contact us with any questions or further information.

Thank you,

A handwritten signature in blue ink that reads "Jose Witt".

Jose Witt
Executive Director
Southern Nevada Conservancy
jwitt@snconservancy.org

4. Center for Biological Diversity

8/20/2020

Mail - Kobelt, Lara A - Outlook

[EXTERNAL] FW: support for SNPLMA project

Patrick Donnelly <PDonnelly@biologicaldiversity.org>

Thu 8/20/2020 12:44 PM

To: trober9567@gmail.com <trober9567@gmail.com>; Kobelt, Lara A <lkobelt@blm.gov>

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Patrick Donnelly
Nevada State Director
Center for Biological Diversity
702.483.0449
pdonnelly@biologicaldiversity.org
Twitter: [@bitterwaterblue](https://twitter.com/bitterwaterblue)

From: Patrick Donnelly
Sent: Thursday, August 20, 2020 12:44 PM
To: 'rwandel@blm.gov' <rwandel@blm.gov>
Subject: support for SNPLMA project

Hello,

I'm writing to express the support of the Center for Biological Diversity for the proposed SNPLMA Round 18 project "Protection of Arrow Canyon Cultural Property and Habitat Restoration" in the Conservation Initiative category. This project will help restore the important ecological values of upper Arrow Canyon. This will in turn promote the restoration of native species of wildlife and support existing populations. Additionally, nominating Arrow Canyon to the National Register of Historic Places is an important step to recognize the significance of the area to local indigenous peoples and move the area toward protection to assure such cultural resources remain for future generations.

The Arrow Canyon project appears to be an ideal use for SNPLMA funds, as it will be of benefit to the conservation of natural resources and the protection of cultural resources. We support this project.

Best regards,
-Patrick Donnelly

Patrick Donnelly
Nevada State Director
Center for Biological Diversity
702.483.0449
pdonnelly@biologicaldiversity.org

5. Nancy Hartgold

8/26/2020

Mail - Kobelt, Lara A - Outlook

FW: [EXTERNAL] Arrow Canyon proposal

Wandel, Robert C <rwandel@blm.gov>

Wed 8/26/2020 4:07 PM

To: Kobelt, Lara A <lkobelt@blm.gov>

Cc: Dooman, Shonna <sdooman@blm.gov>; Bullets, Angelita S <abullets@blm.gov>; Glander, Ian <ianglander@blm.gov>

For your inclusion in the nomination package.

Thanks,
Robert

From: Nancy Hartgold <nehart9@gmail.com>

Sent: Wednesday, August 26, 2020 2:50 PM

To: Wandel, Robert C <rwandel@blm.gov>

Subject: [EXTERNAL] Arrow Canyon proposal

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Mr. Wandel,

I wanted to thank you for the work you do in preserving our Federal lands. I lived in the Las Vegas area five years ago and during that time, I served as President of the Board for the Friends of Sloan Canyon. I moved out the area for several years, but am back residing in Las Vegas.

As a volunteer for conservation organizations and an avid hiker, I wanted to express my support for the Arrow Canyon SNPLMA CI Round 18 Proposal. The document is comprehensive addressing the areas of flooding control, sediment issues, addressing invasive species, maintaining cultural artifacts and projecting endangered species.

An amazing job was done by all who put this report together and I am expressing my support of the items proposed.

Please let me know if there is anything further I can do to assist in getting the proposal approved.

Sincerely,

Nancy HartGold

6. Jim Boone

Dr. Jim Boone, Ph.D.
Las Vegas, NV
Birdandhike.com

Robert Wandel
Assistant District Manager - SNPLMA Division
Bureau of Land Management
4701 N. Torrey Pines Dr.
Las Vegas, NV 89031

August 30, 2020

Re: Protection of Arrow Canyon Cultural Property and Habitat Restoration --
Conservation Initiative

Robert,

I am writing in support of the proposed Protection of Arrow Canyon Cultural Property and Habitat Restoration (Conservation Initiative) plan for SNPLMA-18 funding.

I think there are long-term issues that are not adequately addressed in this proposal, but this is a good beginning, and perhaps the remaining issues can be worked out in the future.

If the flood debris were removed and Arrow Canyon Dam is left in place, each new flooding event will deposit new mud behind the dam. This is just how dams work. However, removing the dam would affect an important cultural resource as well and increase the frequency of minor flooding events downstream (i.e., floods that wouldn't overtop the dam). I'm not sure how to resolve this dilemma other than by a periodic mud removal program, which of course is entirely possible but not sustainable in the long term. A hole in the bottom of the dam might work, but this is not without considerable issues too.

I have often felt that of all the public lands in Clark County, the area above Arrow Canyon Dam is the most infested with the greatest diversity of noxious and other weeds - a truly depressing place to visit. Eradicating the saltcedar and thistles alone would make this project worthwhile.

I'm not sure that developing a high-end model of the local bedrock topography (presumed pre-dam topography) is necessary to estimate the amount of flood debris to be removed, but removing the flood debris, removing the weeds, and recovering the buried petroglyphs (rock stories) is a project long overdue.

I encourage the BLM to fund this project and, at the least, begin the restoration of this important cultural area.

Sincerely,



Jim Boone

7. Anne McConnell

Anne McConnell
9612 Buckhorn Drive
Las Vegas, NV 89134-7835
annemuggs@aol.com

August 21, 2020

Mr. Robert Wandel
Assistant District Manager - SNPLMA Division
Bureau of Land Management
4701 N. Torrey Pines Dr.
Las Vegas, NV 89031

RE: "Protection of Arrow Canyon Cultural Property and Habitat Restoration" Category: Conservation Initiative.

Dear Mr. Wandel:

I have been visiting Arrow Canyon ever since I moved to Las Vegas in 1996. It feels like a magic place to me. The petroglyphs there are outstanding and should be treasured by everyone. They desperately need to be preserved.

Regarding Objective 1, the silt has been building up and I have seen several places where it has covered up the petroglyphs. I understand that it is possible that the silt buildup could actually damage those petroglyphs, so the topographic and sedimentation studies are essential.

Objective 2, Cultural Studies. Several years ago I visited Upper Arrow Canyon along with a group from the Moapa Band of Paiutes. When we arrived, several of them immediately headed off to the other side of the canyon. I assumed that they wanted to visit some locations that were meaningful to them and maybe didn't want the rest of us to know where they went. We did not come across them in our own hikes through the area. We do need to know what the Paiutes want to tell us about what Arrow Canyon means to them.

Much of the rock art was documented by the Nevada Rock Art Foundation in December of 2003, and those reports should be updated. Once all this is done, it would be wonderful if Upper Arrow Canyon could be added to the National Register of Historic Places, and I am happy that signage is included in this proposal. It is so important to tell visitors about an area, so they can respect it the way I do.

Hooray for Objective 3, the removal of invasive species. In the late 1990s I remember seeing lots of native plants there. Then the tamarisk came, an effort was made to eliminate it (but it came back), and then the scotch thistle grew taller than me--it was almost impossible to get through it. Then that was knocked down but has come back, too.

I thoroughly support this proposal and urge its funding.

Sincerely


Anne McConnell

RECEIVED BLM
SOUTHERN NEVADA
DISTRICT OFFICE
2020 AUG 31 A 10: 36

8. Bruce Holloway

BruceHolloway
1505 Frandosa Ln
Las Vegas, NV 89117
702 232 4917
bholloway9@cox.net

Bureau of Land Management Las Vegas
4701 N. Torrey Pines Dr
Las Vegas, NV 89031
Attn. Robert Wandel

8/18/2020

Dear Mr Wandel,

I am writing to you as a avocational Archaeologist. I am a past vice president of Archaeo-Nevada Society And a 10 year membership.

Also I have been a member of SNRAE since 1988 with a slight lapse of membership while at Archaeo.

I want to encourage you and BLM to pursue action on SNPLMA Round 18 Conservation Initiative. Especially the action to be taken in Arrow Canyon. I have been to Arrow Canyon many times over forty years watching the deterioration of the area. With flooding and subsequent damage behind the dam. That flooding has caused much damage to the area with a huge growth of invasive Tamarisk and water damage The growth of the weeds and Tamarisk has caused a lot of damage. Making access to any part of the canyon super difficult. Visitation is nearly impossible.

Also we must be aware of the Native American Indians and their interest in saving the petroglyphs and the many artifacts damaged by flooding and silt sentiment.

Thanks for all the work you do preserving the land we live in.

Sincerely,


Bruce Holloway

RECEIVED BLM
SOUTHERN NEVADA
DISTRICT OFFICE
2020 AUG 24 A 10:05

9. Carol Shimer

Carol A. Shimer
823 San Bruno Ave.
Henderson, Nevada 89002
702-564-3756
sewcute@cox.net

August 18, 2020

Robert Wandel
Assistant District Manager
SNPLMA Division – BLM
4701 N. Torrey Pines Dr.
Las Vegas, Nevada 89031

RE: SNPLMA Round 18-Conservation Initiative, Protection of Arrow Canyon Cultural Property and Habitat Restoration

Dear Mr. Robert Wandel,

I understand that the BLM has already submitted a proposal for tamarisk removal and control of invasive and noxious weeds as well as the restoration of native plant species within the Arrow Canyon Area. I also understand that a full inventory of the Arrow Canyon features and a compilation of new findings, including LIDAR imaging is all part of this proposal. I am hopeful that this data is part of the nomination package to add Arrow Canyon to the National Register of Historic Places.

As a retired archaeologist and an active member of several archaeological organizations, I feel this area can add to our understanding of past cultures. The preservation of agave pits, shelters, rock alignments, and petroglyphs tell a story to our children of how peoples of the past lived and what items and symbols were important to them. These cultural resources that can be observed within the canyon are important to the Native Americans as well as to others who venture out into this area.

I am hopeful that the restoration of Arrow Canyon and its nomination to the National Register of Historic Places will move forward and the preservation of this special area will be saved for generations to come.

Thank you for your time and consideration,

Carol A. Shimer

2020 AUG 24 A 10:03
RECEIVED BLM
SOUTHERN NEVADA
DISTRICT OFFICE

10. Chuck Williams

Chuck Williams
5845 Olivine Falls Ave
Las Vegas, NV 89130
702 268-8731
thursdayhiker@gmail.com

August 19, 2020

Robert Wandel
Assistant District Manager - SNPLMA Division
Bureau of Land Management
4701 North Torrey Pines Drive
Las Vegas, NV 89131

Reference: Support of Arrow Canyon Proposal

As a concerned resident of Nevada, I formally offer my personal support for the initiatives detailed in the proposal submitted to Southern Nevada Public Lands Management Act for funding to protect and preserve this invaluable prehistoric site.

I have visited Arrow Canyon many times over the past 20 years. I have seen how the canyon's features have suffered damage caused by flash flooding as well as an increase in both invasive vegetation and visitors – some of whom have caused physical damage. I am concerned that the cultural features will suffer further deterioration unless action is taken.

I agree with the proposals concern that the invasive vegetation growth raises the possibility wildfire damage.

I was pleased that the proposal included funding to install interpretive signage and adding site monitors to help protect cultural features from additional damage.

Having served as a volunteer site steward for several years, I highly recommend project approval of the entire amount requested so restoration of the canyon can begin as soon as possible.



Chuck Williams

RECEIVED BLM
SOUTHERN NEVADA
DISTRICT OFFICE
2020 AUG 24 A 10:02

11. Elaine Holmes

4740 N. Cimarron Rd.
Las Vegas, NV 89129
August 17, 2020

Mr. Robert Wandel
Assistant District Manager, SNMPLA Division
BLM 4701 N. Torrey Pines Dr.
Las Vegas, NV 89031

To Whom It May Concern:
RE: SNPLMA Round 18 Conservation Initiatives, Protection of Arrow Canyon Cultural Property and
Habitat Restoration

As a resident of Las Vegas for 60 years, I have been to Upper Arrow Canyon numerous times. I have taken my family there, taken friends there and guests from out of town to show them the wonderful rock art. Outside of Valley of Fire I do not believe there is a finer exhibition of Puebloan and Desert Archaic rock art in southern Nevada. I belong to several rock art groups i.e., ARARA (American Rock Art Research Assoc.), URARA (Utah Rock Art Research Assoc.), NRAF (Nevada Rock Art Foundation), and a local group, SNRAA (Southern Nevada Rock Art Assoc.), and Arrow Canyon rock art is well known and admired by all groups. All of these organizations support efforts to conserve and protect Native American rock art and archaeology. Many of the members, myself included, have participated in recording projects and are Site Stewards. I was one of the active participants involved in recording Arrow Canyon by NRAF and know it well. Last fall, when I was there, I could hardly drive in because of the overgrowth of branches of tamarisk. And walking throughout the canyon was nearly impossible. Something clearly needs to be done.

I certainly can understand the Native American position on preserving such a sacred site. Whenever I go there by myself and am quiet I also feel a spiritual presence. Native Americans need access to such a sacred place to practice their beliefs and customs.

I support passage of this proposal

Sincerely,



Elaine Holmes

RECEIVED BLM
SOUTHERN NEVADA
DISTRICT OFFICE
2020 AUG 24 10:05

12. Leigh Grench

Robert Wandel, Assistant District Manager

SNPLMA Division

4701 N. Torrey Pines Dr.

Las Vegas, NV 89031

RE: SNPLMA Round 18 - Conservation Initiative, Protection of Upper Arrow Canyon Cultural Property

Dear Mr. Wandel,

I am in support of the proposed vegetation mitigation project to remove the invasive tamarisk and noxious weeds that have proliferated in the canyon and that are now threatening the integrity of the cultural properties within the canyon environment.

Having visited Arrow Canyon to view the petroglyphs and muse over the large agave pits and other cultural features within the canyon I can attest to the density of the vegetation and the eminent threat to the petroglyphs should a fire start within the canyon. However, a thorough ground truthing cultural inventory must be completed prior to any ground disturbing activity. Hand crews are the preferred method to remove the tamarisk prior to any dozer work for removal of built up sedimentation.

Thank you for your concern and willingness to protect this culturally important area.

Sincerely,



Leigh Grench

RECEIVED BLM
SOUTHERN NEVADA
DISTRICT OFFICE
2020 AUG 31 A 10:36

13. Nancy Gentis

Nancy Gentis
67 Russell St
Charlestown, MA 02129
August 20, 2020

Robert Wandel
Assistant District Manager
SNPLMA Division
Bureau of Land Management
4701 N Torrey Pines
Las Vegas, NV 89031

Dear Mr. Wandel;

I lived in Las Vegas from 1978-2016 and plan on returning to live next year. I am a community activist and have worked with a team of people to help create Sloan National Conservation Area and Gold Butte National Monument.

I have taken numerous trips to Upper Arrow Canyon, too many to count. I have hiked the area extensively. I've seen the changes to the area when the invasive plants were removed from the wash and water flowed and filled with native grasses.

This area is a Nevada treasure. It contains some very unique petroglyphs, only seen in a few places like the "war shield." It contains remnants of Native American life. There are ancient dinosaur tracks. The geology of this area is beautiful. The carving by water has created amazing canyons.

When we have treasures, we protect them. This area deserves permanent protection. I support a plan to protect this national treasure.

Sincerely,



Nancy Gentis
67 Russell St
Charlestown, MA 02129
ngentis@att.net
702-610-8132

RECEIVED BLM
SOUTHERN NEVADA
DISTRICT OFFICE
2020 AUG 31 10:37

14. Nina Bowen

August 21, 2020

Robert Wandel
Assistant District Manager
SNPLMA Division

Dear Mr. Wandel,

It has come to my attention that your office is considering restoration work on Arrow Canyon, along with a nomination to the National Register of Historic Places. I would like to encourage you to do so. Arrow Canyon has been a place that I have visited every couple of years for the last 30 years. It has a special feel that makes me want to come back again and again. There is always something new to discover there, and I have found since moving to the St George area about 10 years ago, that many of my friends feel the same way. This is a very popular place for the locals to visit in the early spring when roads are still muddy in other locations.

There are several special features in the rock art of the canyon that are not unique, but are significant, and help to tie this place in with others in the area. There is a boulder with a serrated edge that is similar to others from St George as well as other sites in Nevada. There are "shield" glyphs that have ties as far west as the desert west of Delta, Utah. There are petroglyphs that show great antiquity as well as others that look to be very recent. The Paiute have expressed to me that they still visit the canyon, and by restoring it to its former self, it honors the spirit of the area as well as the tribe.

Please consider this my letter in support of the restoration, re-vegetation and nomination of this very important place.

RECEIVED BLM
SOUTHERN NEVADA
DISTRICT OFFICE
2020 AUG 31 A 10:35

Nina Bowen
1091 N. Ruby Pl
Washington, UT 84788

15. Pamela and Quentin Baker

Pamela & Quentin Baker
1950 Roadrunner HI
Moab, UT 84532
August 18, 2020

Mr. Robert Wandel
Assistant District Manager
SNPLMA Division
4701 N. Torrey Pines Dr.
Las Vegas, NV 89031

Attention: SNPLMA Round 18-Conservation Initiative
Protection of Arrow Canyon Cultural Property and Habitat Restoration

Dear Mr. Wandel:

We would like to enthusiastically support the initiative to protect Arrow Canyon. Over the past thirty years we have visited several times and the resources there are indeed special—and some of them unique. The research potential has never been thoroughly explored, nor has the sacred nature of the area to existent Native American communities been adequately recognized.

We are pleased to see that the BLM proposal includes not only a comprehensive inventory of the canyon area with subsequent report, but also mitigation measures to protect the resources from sedimentation and fire. There is no doubt that Arrow Canyon should be on the National Register of Historic Places as the law requires.

Sincerely,

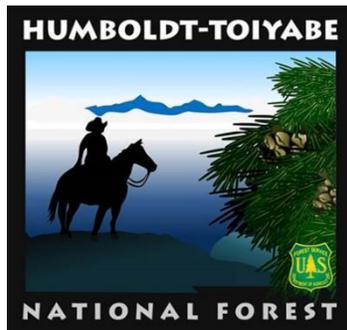
Pamela W Baker
Quentin A. Baker

Pamela W Baker
Quentin A Baker

2020 AUG 24 A 10:02
RECEIVED BLM
SOUTHERN NEVADA
DISTRICT OFFICE

Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

USDA Forest Service
Humboldt-Toiyabe National Forest
Spring Mountains National Recreation Area



Butterfly Habitat Restoration

Amount Requested \$4,390,000

Timeframe: 5 Years

Location: 36.30472222 / -115.752778°

Congressional District: NV-3, NV-4

Project Manager: Kathryn Gulley

Email address: kathryn.gulley@usda.gov

4701 Torrey Pines Drive

Las Vegas, NV 89130

702-515-5430

Purpose Statement:

The Spring Mountains National Recreation Area (SMNRA) of the Humboldt–Toiyabe National Forest will perform habitat restoration and protection of the Federally Endangered Mount Charleston blue butterfly, and Regionally designated sensitive species, the Spring Mountains dark blue and Spring Mountains acastus checkerspot butterflies across the Spring Mountains within the Spring Mountain National Recreation area in Clark County, Nevada.

Background info to support the need:

The SMNRA hosts numerous endemic flora and fauna found nowhere else in the world. Three endemic species; Spring Mountains acastus checkerspot butterfly (*Chlosyne acastus robusta*), and Spring Mountains dark blue butterfly (*Euphilotes ancilla purpura* and *E. a. cryptica*) are considered to be Forest Service Regionally designated sensitive, and the Mount Charleston blue butterfly (*Icaricia (Plebejus) shasta charlestonensis*) was listed as Endangered by the U.S. Fish and Wildlife Service (USFWS) in October 2013.

The Spring Mountains range is a sky island ecosystem and contains about two miles of vertical relief, from the desert valley floor (600 meters) to the top of Mount Charleston (3,632 meters). This dramatic elevation gradient creates eco-zones that hold diverse flora and fauna. The Spring Mountains vertical prominence in concert with geographic isolation to the surrounding low desert valleys has allowed species to evolve in isolation since the late stages of the Pleistocene, approximately 12,000 years ago, creating a high concentration of endemism. The surrounding low elevation Mojave Desert became a barrier to species movement and allowed the species of the Spring Mountains to evolve independently from species in nearby ranges.

This project will implement the planning, research, and environmental analysis of past SNPLMA projects to restore and protect habitat for these endemic species across the Spring Mountains. The prescribed landscape scale treatments and execution of habitat enhancement plans will implement the work of past SNPLMA phases and provide habitat conservation, improvement, and protection for the endangered, sensitive, and endemic butterflies of the Spring Mountains. Such conservation actions are important for both the recovery of the Mount Charleston blue butterfly and preventing other endemic species from becoming endangered by enacting these restoration and protection actions.

Relationship to prior approved phases or related SNPLA projects and description of anticipated phases:

The Endemic Butterfly Habitat Restoration and Protection project will execute the research, planning and NEPA documentation and decision from Butterfly Autecology Phases I, II, and III and IV. Phase IV's primary goal was to complete required environmental analysis for landscape scale treatments proposed in Phase III's Habitat Restoration, Enhancement, and Augmentation plan that could not be accomplished through existing funds. This project also aligns with the Willow Creek Watershed Restoration project, funded by appropriated dollars. The goal of the Willow Creek project is to close unauthorized motorized routes that could not be closed under

SNPLMA and enhance and protect riparian habitat through fence reconstruction, recreationist education, and weed treatments. There are currently no plans for future phases of this project.

A Round 6 project funded Unauthorized Motorized Routes project identified areas of habitat fragmentation that can be restored under this project, which will eliminate further habitat destruction and assist in the creation of movement corridors between breeding metapopulations, and plant “stepping stones” of suitable habitat along movement corridors.

Deliverables:

Primary deliverable:

- Conduct site specific prescriptions that will restore, enhance and augment habitat for target butterfly species in 7 project areas across the Spring Mountains.
 - Collection of butterfly larval host and nectar plant seed.
 - Growing and planting larval host and nectar plants enhance the quality of habitat.
- Implement site specific vegetation reduction treatments for habitat restoration and protection
 - Reduction of vegetation to decrease canopy closure.
 - Removal of vegetation to protect habitat from high severity fires
- Treatment and identification of invasive species in and around the project areas.
 - Monitor and treat known invasive plants in and around the project area.
 - Identify and treat new infestations found in and around the project area
 - Educational outreach and monitoring in and around habitat and restoration areas to engage the public and promote stewardship principles to reduce impacts to habitat
 - Educational or interpretive kiosks or signage at restoration sites to educate the public.
 - Monitoring in restoration areas to educate/enforce proper use.

Anticipated deliverables

- Creation and distribution of educational materials to create public awareness about the spread of invasive species within sensitive habitats.
- Restoration of unauthorized motorized routes and high use areas that fragment habitat
- Public outreach in the form of public events, trail host program, social media engagement, volunteer events, and/or school presentations

Standard Deliverables:

- Developing scopes of work for contracts and agreements
- Quarterly and yearly progress reports
- SNPLMA close-out package

Project Timeframe:

The standard period of performance requested is 5-years.

Year 1 will consist of initiating agreements or hiring personnel for native seed collection and restoration of unauthorized routes. Crews will begin to collect larval host and nectar plant seed to be grown out under a contract, agreement, or on site (dependent on species requirements and availability of contract and agreement prospects). Restoration will begin on unauthorized motorized routes and in concentrated use areas in and around the project boundary to decrease fragmentation and habitat damage caused by unauthorized or excessive use. The contract process for site specific vegetation treatments will begin and personnel will be trained for the COR (Contracting Officer Representative) process to administer those contracts. Treatment and monitoring of invasive species through contracts, agreements, or force account will begin. Educational outreach and monitoring in restoration and project areas will begin. Interpretive and educational materials will be designed.

Year 2 will consist of conducting habitat enhancement activities such as native seed collection and planting. Restoration and monitoring of unauthorized motorized routes will continue. Site specific vegetation reduction treatments will begin. Treatment and monitoring of invasive species will continue. Educational outreach and monitoring in restoration areas will continue, as well as the development and distribution of materials.

Year 3 will consist of conducting habitat enhancement activities such as native seed collection and planting. Restoration and monitoring of unauthorized motorized routes will continue. Site specific vegetation reduction treatments will continue. Treatment and monitoring of invasive species will continue. Educational outreach and monitoring in restoration areas will continue, as well as the development and distribution of materials.

Year 4 will consist of conducting habitat enhancement activities such as native seed collection and planting. Restoration and monitoring of unauthorized motorized routes will continue. Site specific vegetation reduction treatments will continue. Treatment and monitoring of invasive species will continue. Educational outreach and monitoring in restoration areas will continue, as well as the development and distribution of materials.

Year 5 will consist of monitor of restoration sites for invasive species. Follow up monitoring for restoration success. Closeout of all contracts and grants and agreements. Final close out of the project.

Year 1

- Initiate agreements or hire crews for habitat enhancement activities (native seed collection and unauthorized route restoration)
- Initiate contract process for site specific vegetation treatments
- Initiate contracts or agreements to grow out of larval host and nectar plants from collected seed
- Treatment of invasive species
- Educational outreach through trail host, interpretive signage, and volunteer events
- Monitoring and evaluation of restoration sites

Year 2

- Conduct habitat enhancement activities (native seed collection, planting, and unauthorized route restoration)
- Implement site specific vegetation reduction treatments
- Continue larval host and nectar plant grow out
- Treatment of invasive species
- Educational outreach through trail host, interpretive signage, and volunteer events
- Monitoring and evaluation of restoration sites

Year 3

- Conduct habitat enhancement activities (native seed collection, planting and restoration)
- Implement site specific vegetation reduction treatments
- Continue larval host and nectar plant grow out
- Treatment of invasive species
- Educational outreach through trail host, interpretive signage, and volunteer events
- Monitoring and evaluation of restoration sites

Year 4

- Conduct habitat enhancement activities (Native seed collection, planting and restoration)
- Implement site specific vegetation reduction treatments
- Continue larval host and nectar plant grow out
- Treatment of invasive species
- Educational outreach through trail host, interpretive signage, and volunteer events
- Monitoring and evaluation of restoration sites

Year 5

- Educational outreach through trail host, interpretive signage, and volunteer events
- Monitoring and evaluation of restoration sites
- Project Closeout (90-days)

Level of Readiness for Implementation:

NEPA will be finalized for the project areas prior to the initiation of this project. Upon project approval, implementation actions may begin. The contracting process would be initiated for the appropriate project areas of vegetation removal. Agreements would be initiated for seed collection, educational interpreter's restoration crews, and plant grow outs. Consultation with the U.S. Fish and Wildlife Service and planning for restoration within the endangered Mount Charleston blue butterfly habitat will be completed in Phase IV.

Future Operations and Maintenance:

Long-term maintenance of the habitat may require periodically reentering the sites and removal of invasive plant material and will be the responsibility of the SMNRA.

Partnerships and/or contributed funds:

During fiscal year 2021 the Humboldt-Toiyabe is estimated to contribute \$725,000 in appropriated funding to assist with vegetation reduction in Clark Canyon (hand-thin and pile, prescribed burn), Potosi (hand-thin and pile, and pile burning), and Lovell Canyon (mastication, and hand-thin and pile). These Forest Service non-SNPLMA appropriated funds will assist in the project goals of habitat protection, which are excluded in the project's budget. SNPLMA funds will provide additional habitat restoration in these area, and additional protective measures if necessary.

Based on attendance at previous volunteer programs, we anticipate in-kind contributions of volunteer labor through community-wide programs of approximately \$10,000 per year (based on the Department of the Interior's volunteer labor valuations of \$27.20 per hour), or an overall total of \$50,000 throughout the duration of the project. Based on past projects, and an anticipated federal employee labor rate of \$40.00 per hour, we anticipate in-kind Forest Service contributions for non-charged project support to average \$26,000 per year for 5 years (\$130,000). The total in-kind contribution is estimated to be \$180,000.

Volunteer labor will consist of approximately \$2,000 per year to be implemented with volunteer events or as part of a volunteer trail hosting programs. Additionally, project partners may include volunteer program partnership components.

SMNRA appropriated funds, in the amount of \$750,000 to for vegetation and protection treatments in selected sites will be used to implement restoration work during fiscal year 2021.

The remainder of the page intentionally left blank.

Funding Summary and Budget Detail:

ROUND 18			
CONSERVATION INITIATIVES NOMINATION			
ESTIMATED DIRECT COSTS & KEY MILESTONES			
Project Name:	Endemic Butterfly Habiata Restoration	Date prepared:	9/9/2020
Project #		Agency:	USDA Forest Service, SMNRA
Prepared by:	Kathryn Gulley	Priority #:	
Title/position:	Biologist	Phone #:	
1 Planning & Environmental Documentation		\$0	0.00%
Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)			
2 FWS Consultation - Endangered Species Act		\$0	0.00%
Direct expenses or FWS consultation, if required.			
3 Direct Federal Labor to Implement Project (Payroll)		\$450,000	10.25%
For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.			
4 Project Equipment and/or Supplies and Materials		\$178,000	4.05%
Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.			
5 Travel and Per Diem for Implementation		\$1,500	0.03%
Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below			
6 Official Vehicle Use (vehicles with Federal license only)		\$60,000	1.37%
Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost			
7 Training (required to implement the project)		\$3,000	0.07%
Includes training essential/necessary for implementation of the project.			
8 Contracts, Grants, and/or Agreements		\$3,530,000	80.41%
CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan.			
9 Other Necessary Expenses (See Appendix B-11)		\$167,500	3.82%
Total requested/estimated budget		\$4,390,000	100.00%
10 Estimated agency or partner contribution		\$0	
Total Estimated project value		\$4,390,000	

Performance Measures:

Restoration of endemic butterfly habitat to improve connectivity and overall resource availability to provide improved conditions to assist in species conservation.

Collection and grow-out of species-specific butterfly larval host and nectar plants that will be used to increase connectivity of habitat where gaps exist and increase the quality of habitat throughout the project areas.

Performance Measure	Description
H4	Acres of Upland Habitat Treated, Enhanced, or Restored
H14	Number of Threatened and Endangered Species Recovery Actions Implemented
H15	Number of Scientific / Technical Reports Produce Number of Conservation Actions Implemented for Non-Listed Species
O4	Number of Scientific / Technical Reports Produced
O9	Number of GIS Databases Generated and/or Map Layers Produced
O11	Number of Databases, Reports, and Other Electronic Means of Documenting Activities

Reducing habitat fragmentation by restoring unauthorized motorized and undesignated user routes in and around the project area.

Performance Measure	Description
H16	Miles of Roads or Trails Decommissioned and/or Rehabilitated

Reduce vegetation in prescribed areas to remove improve habitat conditions by decreasing the canopy closure and remove excess hazardous fuels to protect the habitat from high severity fires. The project addresses the following performance measures:

Performance Measure	Description
F1	Acres of Hazardous Fuels Treated – Non-Wildland Urban Interface (WUI)
F2	Acres of Hazardous Fuels Treated – Wildland Urban Interface (WUI)

Treatment and identification of invasive species in and around the project areas

Performance Measure	Description
H9	Acres of Invasive Plant Species Treated or Restored
H10	Acres of Hazardous Fuels Treated – Wildland Urban Interface (WUI) Acres of Invasive Plant Species Surveyed, Inventoried, or Monitored

Creation and distribution of educational materials to create public awareness about the spread of invasive species within sensitive habitats. This action addresses the following performance measures

Performance Measure	Description
O6	Number of New Interpretive or Education Publications/Signs/Kiosks/Displays/etc. Produced

Continue educational butterfly trail host program to engage and educate the public on Spring Mountains endemic butterfly species and the importance of habitat protection. Engage the community through education presentations, volunteer events, or social media engagement.

Performance Measure	Description
O5	Number of Outreach Contacts Made
O6	Number of New Interpretive or Education Publications/Signs/Kiosks/Displays/etc. Produced

Monitor areas to reinforce restoration sites. This action addresses the following performance measures

Performance Measure	Description
O3	Number of Law Enforcement Patrols, Incident Reports, Investigations
O7	Number of Interpretive or Education Presentations Given and/or Community Events Participated in or Hosted Number of New Interpretive or Education Publications/Signs/Kiosks/Displays/etc. Produced
O10	Number of Volunteers Used

Compliance with Departmental Priorities, Strategic Goal, Executive Orders, or Secretarial Orders:

The project supports the following Executive and Secretarial Orders, as well as USDA Forest Service Priorities and Strategic Goals:

Executive Order No 13855 (6). An additional benefit of this project's restoration and habitat improvement will be a reduction in vegetation and canopy coverage. This will directly reduce the risk of-wildfire through management of forest health treatments that address excessive fuel loading within the areas.

Secretarial Order No 3372. This project protects wildlife habitats and watersheds by actively managing the lands to reduce the risk of catastrophic wildfire.

Wildland Fire Directive [Joint Department of the Interior and Department of Agriculture]: One of the Federal fire strategic goals is to ensure that landscapes and

communities across all jurisdictions are resilient to fire related disturbances. This project will carry out activities that address the vegetation composition and structure to improve and restore endemic butterfly habitat, which will also alter fuel loads to reduce hazards.

Ranking Criteria:

Criteria 1. **Project supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability Project**

- ***Habitat Enhancement:*** This project will enhance and connect butterfly habitat for both federally endangered and Regionally sensitive species. These proactive steps will help to conserve and improve habitat for species that have been previously petitioned for listing and help to improve habitat conditions for the listed Mount Charleston blue butterfly. This project will also treat and monitor known infestations of invasive species in and around the project area, as well as survey for new infestations. The implementation of this habitat restoration and protection will be landscape scale covering up to 6,262 acres enhancing range wide habitats for the Mt. Charleston blue butterfly, Spring Mountains Acastus checkerspot, and Spring Mountains dark blue butterfly.
- ***Cultural Resources:*** It also minimizes impacts to cultural resources through avoidance and reduction of unauthorized off-road vehicle impacts. Culturally sensitive areas have been identified in the NEPA and Section 106 consultation for avoidance and protection. Educational Kiosks will incorporate tribal involvement and consultation when possible.
- ***Public Health and Safety:*** Information Kiosks and Signage will be used in high impact areas to reduce overuse and mitigate impacts. This information will provide recreator with information to assist in limiting their impacts and how to practice responsible outdoor recreation.

Criteria 2: **Project supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability.**

- This project conserves resources to ensure availability to future generation through management of natural resources for current public benefit.
- The implementation of Deliverables I and II conserves, restores and protects the functionality, resilience, and integrity of biological communities, specifically for the endemic butterflies but also for the entire biological community. Overall species richness and diversity should improve and positively impact all flora and fauna within the project areas.
- The impacts of this project will remain relevant and continue to provide a benefit beyond the existence of SNPLMA. The project provides long term

conservation and restoration that will protect and improve habitat well beyond the SNPLMA project timeline.

Criteria 3: *Project promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites.*

- This project encourages people to meaningfully connect with their natural environment in the continuation of the trail host program that teaches stewardship and spread educational messaging to other users in sensitive habitat areas. This project will engage people in person at community and volunteer event, virtually through social networking sites, and on site through interpretive signage. These outreach methods will provide the public with a better understanding of their role in habitat protection and the importance of the impacted flora and fauna.
- Project has identified committed non-SNPLMA sources of funding (\$750,000) and in-kind contribution from personnel hours for the implementation of the project.
- Cultural sites within the project area will be indirectly preserved by project actions by reduction in fire severity and spread, as well as the restoration of unauthorized routes that damage cultural sites.

Criteria 4 **Project has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project**

- This nomination addresses and meets the needs of more than one agency by protecting species and their habitat that included in State and County conservation lists. Additionally, adjacent agency lands indirectly benefit by the reduction in fires with high severity and likelihood of spread on to those adjacent lands.
- This nomination will incorporate non-Federal groups, public partners, citizen groups or organizations by working with groups such as but not limited to, Friends of Nevada Wilderness, the Great Basin Institute, Get Outdoors Nevada and Southern Nevada Conservancy to engage the community in public events, outreach, and volunteer opportunities.
- This nomination will continue the stewardship component created during Phase IV Autecology to continue to broaden community support and user stewardship, and will help to reduce long-term costs by minimizing the human impact on the environment through education and community outreach.

Criteria 5 **Project has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project.**

- Volunteer labor will consist of approximately \$2,000 per year to be implemented with volunteer events or as part of a volunteer trail hosting

programs. Additionally, project partners may include volunteer program partnership components.

Criteria 6 Advances the Agency/Entity Priorities

- ***Wildland Fire Directive [Joint Department of the Interior and Department of Agriculture]: One of the Federal fire strategic goals is to ensure that landscapes and communities across all jurisdictions are resilient to fire related disturbances.*** This project will carry out activities that address the vegetation composition and structure to improve and restore endemic butterfly habitat, which will also alter fuel loads to reduce hazards.

Criteria 7 Consistence with Sacerdotal Orders, Executive Orders, and Directives

- ***Executive Order No 13855 (6).*** An additional benefit of this project's restoration and habitat improvement will be a reduction in vegetation and canopy coverage. This will directly reduce the risk of-wildfire through management of forest health treatments that address excessive fuel loading within the areas.
- ***Secretarial Order No 3372.*** This project protects wildlife habitats and watersheds by actively managing the lands to reduce the risk of catastrophic wildfire.

Map:

The habitat restoration project encompasses multiple habit areas within the SMNRA, shown on the attached map. The project areas are generally defined as:

- Clark Canyon (36°20'06" N 115°46.51" W),
- Upper Wheeler wash (36°18'37" N 115°49'22" W),
- Mud Springs (36°22'29" N 115°41'12" W),
- Lovell Canyon (36°10'00" N 115°34'42" W),
- Lower Lee Canyon (36°20'57" N 115°38'42" W),
- Upper Lee Canyon (36°18'17" N 115°40'31" W),
- Potosi 35°59'05" N 115°31'10" W and are delineated on the map.

The remainder of the page intentionally left blank.

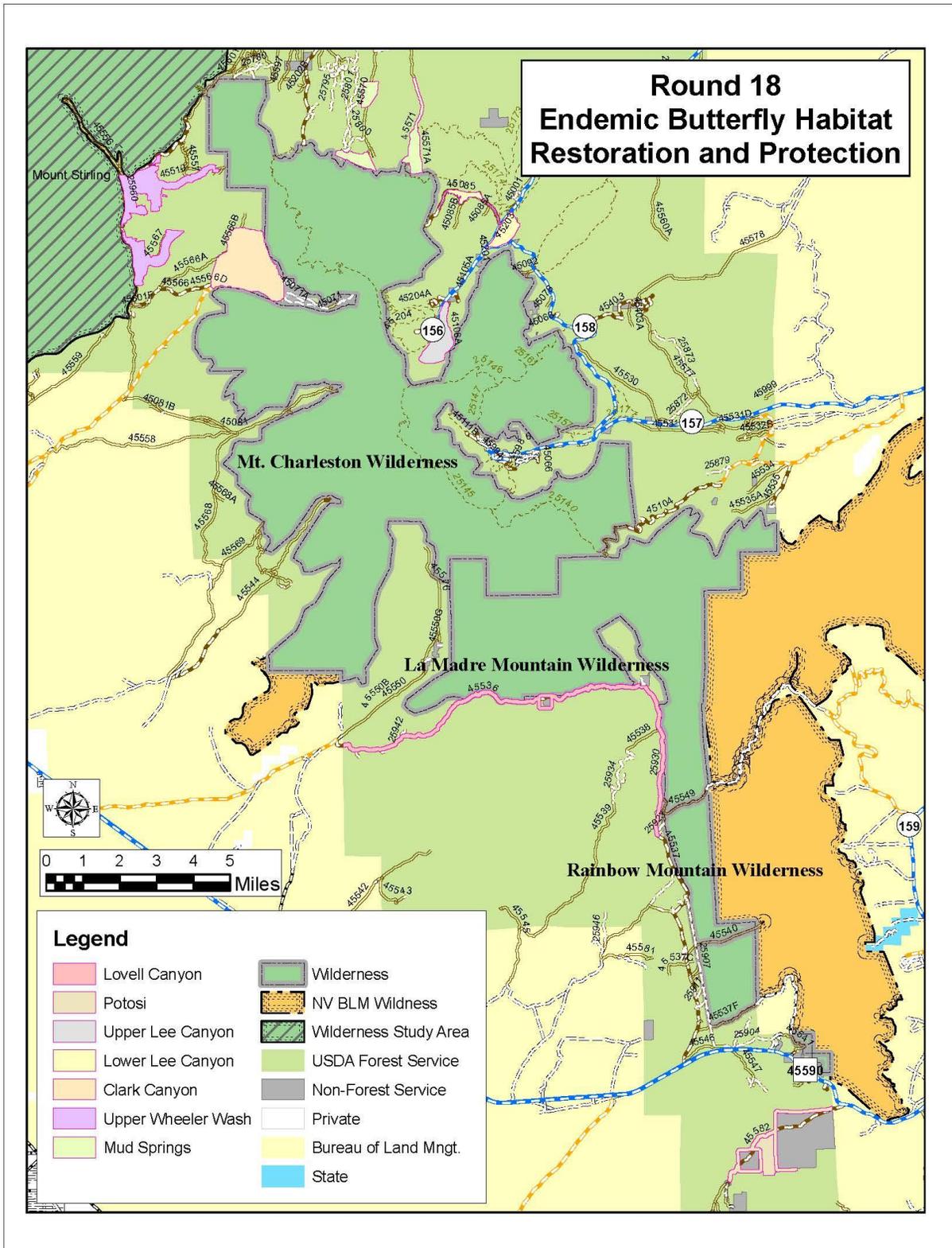


Figure 1 Habit restoration project locations

Photos:

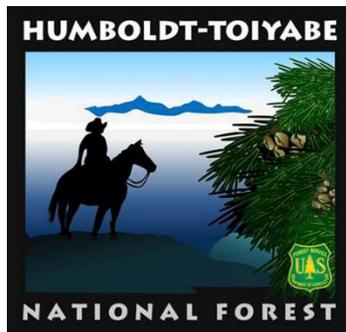
None.

Letters of support:

None.

Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

United States Department of Agriculture
Humboldt-Toiyabe National Forest
Ely Ranger District



Cultural and Paleontological Resource Protections

Amount Requested \$955,381

Congressional District NV-4
Timeframe: 5 Years
Location: 39.272896° / -114.198616°

Project Manager: John D. Powell
Email address: john.d.powell@usda.gov

Purpose Statement:

The Ely Ranger District, Humboldt-Toiyabe National Forest will excavate, salvage, stabilize, study, and interpret cultural and paleontological resources at a unique cave within the North Snake Range, White Pine County, Nevada. The objective is to stabilize and preserve important resources contained at the site.

Background info to support the need:

The cave contains significant archeological and paleontological resources. This cave and its resources are very important to multiple Native American Tribes.

From 1925 to the 1970s significant excavations occurred at the site. These excavations were not well planned or coordinated and left some challenges that need restoration. This proposal will ensure coordination of all partners to meet the objectives in an organized and planned manner.

This Cave has a rich cultural history, dating back to prehistoric peoples beginning at least 12-13,000 years ago. Archeological and paleontological studies at this location were first initiated in 1925 and continued by various groups every decade after until the 1970s. This cave also has provided evidence of Paleoindian occupation at ~12-13,000 years before present (BP), as well as use by late prehistoric hunters from about 1000-2000 BP. The teams of researchers in this project will be re-evaluating these cultural resources with their salvage of slumped sediments and proposed excavations in the front apron of the cave, where most of the archaeological evidence is located.

The Project Area is a limestone cave in the northern Snake Range in White Pine County. The large alcove entrance has been used as a shelter for prehistoric peoples beginning at least 12-13,000 years ago but was also used by a high diversity of now extinct and extant vertebrates before, during and after the last Ice Age. First excavated in 1925, with additional excavations by various groups occurring every decade since then until the 1970s. The Cave has produced one of the richest and most diverse vertebrate fossil assemblages in the Great Basin and western North America. This Cave is the type location for two extinct species of birds and one mammal, but the entire vertebrate fauna has never been fully identified and described. This cave also has provided evidence of Paleoindian occupation at ~12-13,000 years before present (BP), as well as use by late prehistoric hunters from about 1000-2000 BP. Over the decades, excavations by researchers and pits dug by pothunters have caused considerable damage to this site because the exposed pits and trenches were never backfilled and intact sediments have been collapsing, losing context and stratigraphic control of the rich vertebrate fauna as well as archaeological artifacts. The cave continues to receive heavy visitation by recreational spelunkers.

This Cave contains one of the richest late Pleistocene vertebrate faunas in the Great Basin and is the type locality for one extinct mammal (Harrington's Mountain Goat, *Oreamnos harringtoni*) and two extinct birds, an eagle (*Spizaetus willetti*) and the giant teratorn (*Aiolornis incredibilis*) which is known by fragmentary material from only five other fossil sites in North America. A number of other extinct species are present in this diverse fauna, including two species of camel (*Camelops* sp. and ?*Hemiauchenia* sp.), horse (*Equus* sp.), Noble Martin (*Martes nobilis*) and at

least 50 taxa of extant species of rodents, rabbits, carnivores, and ungulates. Birds are equally diverse with 50 taxa of which only a few have been described in detail. This avifauna also includes several extinct taxa of goose, hawk, and vultures including numerous bones of the extinct condor, *Brachyops clarki*, that is the largest collection of this species outside of the Rancho la Brea tar pits, California. The herpetofauna includes four species of amphibians and 19 reptiles. Pollen, seeds, and macroplant remains also are well preserved in this cave that add to the paleoecological reconstruction. As a whole, the rich fossil record at the Cave reflects a very different environment than what is found near the cave today, with evidence of the large pluvial lake in the valley at the mouth of the canyon where the Cave is located, as well as riparian habitat in the canyon and coniferous habitats on the slopes above. It is rare to have one fossil locality that so completely represents an Ice Age environment as this Cave and thus the natural resources here are invaluable and have considerable importance in understanding the paleoecology and community structure of the late Pleistocene Great Basin and western North America.

This project will secure and protect important high-value paleontological resources and stabilize at-risk sediment deposits for future research. We propose to identify and describe the entire vertebrate fauna, including unsorted and unidentified fossils in museum collections from previous excavations, that would provide an over 12,000-year, and possibly up to 100,000-year natural history of the eastern Great Basin. We also will collect, preserve and identify macroplant remains from cave sediments that will add to our understanding of late Pleistocene plant communities in this region of Nevada.

The project will evaluate slumped sediments, excavate small areas for more detailed chronological information, and stabilize the remaining *in situ* sediments to protect them from further damage. We also will develop an educational program for the public that will include a website of project progress, visits to K-12 schools to showcase the importance of caves in the Great Basin for understanding our natural and cultural heritage, and develop interpretive signs to highlight the importance of this site and need for protection. Finally, we will nominate this Cave for listing on the Nevada State Register of Historic Sites with the State Historic Preservation Office to recognize the significance of this site to Nevada natural and cultural history.

This Cave is a natural archive of cultural and biological resources that represent over 12,000 years, and possibly up to 100,000 years of Great Basin prehistory but more study is needed. The archaeological and paleontological resources are in extreme need of salvage from damaged areas and stabilization to protect intact areas. Public education will be essential so that this site is recognized for its importance, but still accessible for legal activities and recreation. For all these reasons, this cave is eligible for listing on the Nevada State Register of Historic Sites and will be nominated for this recognition as part of this project.

Relationship to prior approved phases or related SNPLA projects and description of anticipated phases:

There are no anticipated future or prior phases of this project.

Deliverables:

Primary deliverables

- (1) Salvage of cultural and paleontological resources that have lost their stratigraphic context via slumping of cave sediments into open pits and trenches from previous excavations.
- (2) Excavation of *in situ* sediments to recover fossil material and obtain for the first time an accurate and full understanding of the chronology of cultural and natural resources in the cave.
- (3) Stabilization of all remaining intact cave sediments so that no further loss of material occurs via slumping and collapse, permanently preserving and protecting the resources.
- (4) Description and peer-reviewed publication of fossil assemblages recovered from the cave, including unstudied collections from previous excavations, to provide a full understanding of Ice Age plant and animal communities in the eastern Great Basin.
- (5) Provide public education on cave resources via websites, presentations at K-12 classrooms, exhibits at offices or visitor centers, and signage at the cave that explains the importance of protecting and preserving cave resources.

Anticipated deliverables

- (1) Increased public awareness or the importance of cultural and paleontological resources.
- (2) Increased stewardship of public lands

Standard deliverables

- (1) Paleontological and Cultural survey data for NEPA
- (2) NEPA decision document
- (3) Preparation of Wilderness Minimum Requirements Decision Guide
- (4) SNPLMA close-out package

Project Timeframe:

The Period of Performance requested is 5-years, including 90-days for closeout. The following is an outline of activities and timeframe for completion:

Year 1

- Complete archeological and biological survey work.
- Consultation and coordination with Tribal Governments.
- Work on the 106 report and consultation with SHPO.
- Prepare news releases and scoping notifying the public about the Project.
- Coordination with the County, Tribal Governments and other interested groups.
- Complete the NEPA process.
- Complete and begin implementing cooperative agreements.

Year 2

- Begin implementation of excavation and stabilization work.
- Continue ongoing consultation and coordination with Tribal Governments.
- Begin public outreach and education.

Year 3

- Continue implementation of excavation and stabilization work.
- Continue ongoing consultation and coordination with Tribal Governments.
- Continue public outreach and education.

Year 4

- Complete implementation of excavation and stabilization work.
- Continue ongoing consultation and coordination with Tribal Governments.
- Continue public outreach and education.
- Complete peer reviewed publications.
- Install educational/interpretive signs.
- Install SNPLMA Sign

Year 5

- Close out agreements.
- Final accomplishments/close-out reports completed, and the public news releases prepared.

Success for this proposal would be to complete removal and screening of slumped sediments to salvage all archaeological and paleontological resources, obtaining new information on the age and extent of the deposits with limited excavations, and stabilization of all remaining *in situ* sediments to protect them from further damage. Public awareness of the importance of this site for cultural and natural heritage of the Great Basin will be gained.

Level of Readiness for Implementation:

Upon receiving funds, the Ely Ranger District will begin implementation of the project. As we prepared this proposal, we opened a conversation with the Native American Tribes who may have an interest in this project. The Forest Service will begin the NEPA process, Wilderness and Cultural analysis, Tribal Consultation, and begin Section 106 consultation. The Humboldt-Toiyabe National Forest currently has key staff positions filled that are essential in carrying these aspects of the project forward. This project will involve considerable work with the tribes and through the 106 process.

Success for this proposal would be to complete removal and screening of slumped sediments to salvage all archaeological and paleontological resources, obtaining new information on the age and extent of the deposits with limited excavations, and stabilization of all remaining *in situ* sediments to protect them from further damage. Public awareness of the importance of this site for cultural and natural heritage of the Great Basin will also be gained. The project meets the goals and objectives of the SNPLMA Strategic Plan.

Future Operations and Maintenance:

Not applicable

Partnerships and/or contributed funds:

None

Funding Summary:

ROUND 18			
CONSERVATION INITIATIVES NOMINATION			
ESTIMATED DIRECT COSTS & KEY MILESTONES			
Project Name:	Excavation and Stabilization of Unique Archaeological	Date prepared:	8/7/2020
Project #		Agency:	USFS
Prepared by:	Doug Powell	Priority #:	
Title/position:	Geologist	Phone #:	435-899-9470
1 Planning & Environmental Documentation			
			\$32,400
			3.39%
	Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)		
2 FWS Consultation - Endangered Species Act			
			\$25,920
			2.71%
	Direct expenses or FWS consultation, if required.		
3 Direct Federal Labor to Implement Project (Payroll)			
			\$54,000
			5.65%
	For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.		
4 Project Equipment and/or Supplies and Materials			
			\$10,000
			1.05%
	Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.		
5 Travel and Per Diem for Implementation			
			\$15,000
			1.57%
	Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below		
6 Official Vehicle Use (vehicles with Federal license only)			
			\$13,300
			1.39%
	Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost		
7 Training (required to implement the project)			
			\$0
			0.00%
	Includes training essential/necessary for implementation of the project.		
8 Contracts, Grants, and/or Agreements			
			\$691,761
			72.41%
	CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan.		
9 Other Necessary Expenses			
			\$113,000
			11.83%
	(See Appendix B-11)		
Total requested/estimated budget			
			\$955,381
			100.00%
10 Estimated agency or partner contribution			
			\$0
Total Estimated project value			
			\$955,381

Performance Measures:

The proposed Humboldt-Toiyabe National Forest Excavation and Stabilization of Unique Archaeological and Paleontological Resources Project supports the following SNPLMA Performance Measures:

- Output of Primary Deliverable 1: Salvage of cultural and paleontological resources that have lost their stratigraphic context will allow for a more full identification and description of the fauna and flora from cave sediments that will add to our understanding of late Pleistocene communities in this region of Nevada. The SNPLMA Performance Measures include:
 - Performance Measure C1 - Number of Cultural or Historic Sites or Structures Stabilized or Protected.
 - Performance Measure C2 - Number of Cultural or Paleontological Artifacts Protected.
 - Performance Measure C3 - Acres of Cultural / Paleontological Resources Surveyed, Inventoried or Monitored.
 - Performance Measure O1 - Number of Hazardous Sites Remediated.
 - Performance Measure O4 - Number of Scientific / Technical Reports Produced.
 - Performance Measure O5 - Number of Outreach Contacts Made.
 - Performance Measure O6 - Number of New Interpretive or Education Publications/Signs/ Kiosks/Displays/etc. Produced.
 - Performance Measure O7 - Number of Interpretive or Education Presentations Given and/or Community Events Participated in or Hosted.
 - Performance Measure O11 - Number of Databases, Reports, and Other Electronic Means of Documenting Activities.

- Output of Primary Deliverable 2: Limited excavations of *in situ* sediments will allow the recovery fossil material and obtain a more accurate understanding of the chronology of cultural and natural resources in the cave and the past environment. The SNPLMA Performance Measures include:
 - Performance Measure C2 - Number of Cultural or Paleontological Artifacts Protected.
 - Performance Measure C3 - Acres of Cultural / Paleontological Resources Surveyed, Inventoried or Monitored.
 - Performance Measure O1 - Number of Hazardous Sites Remediated.
 - Performance Measure O4 - Number of Scientific / Technical Reports Produced.
 - Performance Measure O5 - Number of Outreach Contacts Made.
 - Performance Measure O6 - Number of New Interpretive or Education Publications/Signs/ Kiosks/Displays/etc. Produced.
 - Performance Measure O7 - Number of Interpretive or Education Presentations Given and/or Community Events Participated in or Hosted.
 - Performance Measure O11 - Number of Databases, Reports, and Other Electronic Means of Documenting Activities.

- Output of Primary Deliverable 3: Stabilization of all remaining intact cave sediments will ensure that no further loss of material occurs via slumping and collapse, preserving and protecting the resources into the future:
 - Performance Measure C2 - Number of Cultural or Paleontological Artifacts Protected.
 - Performance Measure C3 - Acres of Cultural / Paleontological Resources Surveyed, Inventoried or Monitored.
 - Performance Measure O1 - Number of Hazardous Sites Remediated.
 - Performance Measure O6 - Number of New Interpretive or Education Publications/Signs/ Kiosks/Displays/etc. Produced.
 - Performance Measure O7 - Number of Interpretive or Education Presentations Given and/or Community Events Participated in or Hosted.
 - Performance Measure O11 - Number of Databases, Reports, and Other Electronic Means of Documenting Activities.

- Output of Primary Deliverable 4: Archeological and paleontological resources will be documented and peer-reviewed publications completed of fossil assemblages recovered from the cave, including unstudied collections from previous excavations, to provide a full understanding of Ice Age plant and animal communities in the eastern Great Basin:
 - Performance Measure (PM) C3 - Acres of Cultural / Paleontological Resources Surveyed, Inventoried or Monitored
 - Performance Measure O4 - Number of Scientific / Technical Reports Produced.
 - Performance Measure O5 - Number of Outreach Contacts Made.
 - Performance Measure O11 - Number of Databases, Reports, and Other Electronic Means of Documenting Activities.

- Output of Primary Deliverable 5: Develop public educational information on cave resources via websites, presentations at K-12 classrooms, exhibits at offices or visitor centers, and signage at the cave will explain the importance of protecting and preserving cave resources to the public:
 - Performance Measure (PM) O5 - Number of Outreach Contacts Made.
 - Performance Measure O6 - Number of New Interpretive or Education Publications/Signs/ Kiosks/Displays/etc. Produced.
 - Performance Measure O7 - Number of Interpretive or Education Presentations Given and/or Community Events Participated in or Hosted.
 - Performance Measure O11 - Number of Databases, Reports, and Other Electronic Means of Documenting Activities.

Executive Committee Strategic Plan Values:

The Executive committee I Strategic Plan identified sustainability, connectivity, and community as desired values for SNPLMA funded projects.

- 1. Project promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support.**

Conserves resources to ensure availability to future generation through management of natural and/or cultural resources for current public benefit and sustainable social and economic utilization.

- This project will involve the excavation, identification, protection, stabilization and interpretation of cultural and paleontological resources within the cave in question.
- This project was developed in an attempt to bring together multiple Universities, research institutions, and interested parties with Tribal Governments to move forward in a well-organized and collaborative manner.

Conserves or restores the functionality, resilience, and integrity of biological communities and/or cultural resources through prudent management and prevention of injury, decay, waste, or loss.

- This project will involve the excavation, identification, and protection of significant cultural and paleontological resources within the cave in question.
- These resources will be secured and studied to not only protect the resources but to also gain significant scientific information.

Will remain relevant and continue to provide a benefit beyond the existence of SNPLMA.

- This project will protect and stabilize the cave and its resources far beyond the life of the SNPLMA Program.
- Under this project cultural and paleontological resources will be collected and preserved for the benefit of future generations.

2. Project promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites.

Encourages people to meaningfully connect with their natural environment and helps them appreciate and care for the environment by providing information and resources to educate and engage people in understanding their role in protection and maintaining the natural environment by providing opportunities for them to connect to the natural resources directly or virtually, or provides education of the environment.

- This project will involve the placement of signs or kiosk to interpret cave, cultural, and paleontological resources in the area.
- Signs will also be placed to protect this particular cave and its resources and facilitate safe recreational spelunking activities.
- This project will also provide interpretive and educational materials to the public to help protect these significant resources.

Project has identified committed non-SNPLMA sources of funding or in-kind contribution for the planning, design, and development of the project.

- This project will involve multiple cooperative agreements. Under these cooperative agreements the partners will provide a minimum of 20% match which is typically covered by salary contributions.
- The exact amount of the contributed funds is currently not known and will be determined as the cooperative agreements are developed.

- This project will also involve volunteers throughout the process. The number of volunteers and estimated value of volunteer time is not currently known.

Preserves the past (cultural or historic sites) for present or future generations

- This project will identify, stabilize, inventory, protect and interpret unique and significant cultural and paleontological resources in the vicinity of Mount Moriah on the Ely Ranger District.
- Once completed, the information collected can be used for generations to come. This information has significant educational, scientific, and interpretive value.
- This site and the resources contained here are very important to Native American Tribes and so we are working hard to include the Tribes throughout the process.

3. Project promotes sustainability, connectivity, and community by connecting people to nature and recreational opportunities by uniting communities with important places across the landscape

The nomination addresses and meets the needs of more than one agency (federal or state)

- This project addresses the needs of the State of Nevada (SHPO), the Forest Service, and Tribal Governments

The nomination involves non-Federal, public partners, citizen groups or organizations in the development and accomplishment of resource management goals and other activities to prevent waste, damage or neglect.

- This project involves two universities, several research institutions including major museums, and other interested groups and volunteers to accomplish the overall goals of the project.

The nomination clearly defines and includes a stewardship component (Federal or non-Federal) to broaden support and reduce long-term costs by minimizing the human impact on the environment through an education plan with clear curricula and achievable goals and objectives.

- This project was developed to bring together multiple universities, research institutions, and interests in both cultural and paleontological resources at this project site.
- The Forest Service determined there was a need to bring the different entities together whereas they each had interests that overlapped at this project site.
- This site is also very important to multiple Native American Tribes who may have concerns. This project will involve those Tribes into the planning and implementation of the project to ensure their concerns/interests are considered.
- The Forest Service was also concerned that the actions on this site are funded sufficiently to ensure a good project was implemented by all interested parties and to address some of the issues that remain on the site from work that occurred in the 1970s.
- This project will stabilize one of the most important and unique fossil and archaeological sites in the western U.S. and protect the resources well into the future.

Compliance with Departmental Priorities, Strategic Goal, Executive Orders, or Secretarial Orders:

Department of the Interior Priorities:

- a) Create a conservation stewardship legacy second only to Teddy Roosevelt.
 - This project will excavate, inventory, protect and stabilize significant archeological and paleontological within a significant cave on the North Snake Range.
 - This project will also educate the public about archeological and paleontological resources as well as caves.
- b) Sustainably develop our energy and natural resources.
 - Not Applicable
- c) Restore trust and be a good neighbor.
 - The Ely Ranger District has been working closely with Universities, research institutions, museums, State governments, non-profit organizations, and other federal agencies to develop this proposal.
 - There is concern with the Tribes regarding this project. We have reached out to the various Tribal Governments early in the development of this proposal and will be working with them throughout the process.
- d) Ensure the tribal sovereignty means something.
 - There is concern with the Tribes regarding this project. We have reached out to the various Tribal Governments early in the development of this proposal and will be working with them throughout the process.
- e) Increase revenues to support the Department and national interests.
 - Not Applicable
- f) Protect our people and the border.
 - Not Applicable
- g) Strike a regulatory balance.
 - Not Applicable
- h) Modernize our infrastructure.
 - Not Applicable
- i) Reorganize the Department for the next 100 years.
 - Not Applicable
- j) Achieve our goals and lead our team forward.
 - Not Applicable

U.S. Forest Service Priorities:

- a) Uplifting and empowering our employees through a respectful, safe working environment.
 - Not Applicable
- b) Being good neighbors and providing excellent customer service.
 - The Ely Ranger District has been working closely with Universities, State governments, non-profit organizations, and other federal agencies to develop this proposal.
 - There is concern with the Tribes regarding this project. We have reached out to the various Tribal Governments early in the development of this proposal

- and will be working with them throughout the process.
- We have been working with partners to design and plan this project.
 - c) Promoting shared stewardship by increasing partnerships and volunteerism.
 - The Ely Ranger District has been working closely with Universities, research institutions, State governments, non-profit organizations, and other federal agencies to develop this proposal.
 - d) Improving the condition of forests and grasslands.
 - This project will excavate and inventory significant archeological and paleontological resources.
 - This project will also protect and stabilize the cave and the resources contained within that cave.
 - e) Enhancing recreation opportunities, improving access, and sustain infrastructure.
 - This Project will improve recreational opportunities through the education and interpretation opportunities related to archeology, paleontological, and cave resources.

Executive Orders (EO) and Secretarial Orders (SO)

- **EO No. 13855 Promoting Active Management of America’s Forests, Range Lands to Improve Conditions and Reduce Wildfire Risk**
Not Applicable

- **SO No. 3347: Conservation Stewardship and Outdoor Recreation**
This Project will improve recreational opportunities through the education and interpretation opportunities related to archeology, paleontological, and cave resources.

The project will advance conservation stewardship and outdoor recreation in the area. It will provide needed stabilization of fragile nonrenewable resources and protect the resources well into the future. The project will also enhance outdoor recreation through educational and outreach opportunities.

- **SO No. 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes and Territories**
Not Applicable
- **SO No. 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors**
Not Applicable
- **SO No. 3366: Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior**
This Project will improve recreational opportunities through the education and interpretation opportunities related to archeology, paleontological, and cave resources.

- Although this project is located on National Forest System Lands, it will meet the intent of the SO No. 3366. The project will provide recreational opportunities through a wide range of public education and outreach to include interpretive signs and kiosks to highlight the importance of conservation, protection, and preservation.
- **SO No. 3370: Conservation Stewardship and Increasing Public Access to Urban National Wildlife Refuges**
Not Applicable
- **SO No. 3372: Reducing Wildfire Risks on Department of the Interior Land Through Active Management**
Not Applicable
- **SO No. 3373 Evaluating Public Access in Bureau of Land Management Public Land Disposals and Exchanges**
Not Applicable
- **SO No. 3374 Implementation of the John D. Dingell, Jr. Conservation, Management and Recreation Act**
Not Applicable
- **SO No. 3376 Increasing Recreational Opportunities through the use of Electric Bikes**
Not Applicable

Ranking Criteria:

Criteria 1. Project supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability.

A. Habitat Enhancement

- Cave Management
 - This project will recover and protect significant resources contained within a cave on the North Snake Range.
 - This project will also provide valuable information regarding caves and the resources within them.
 - This project will improve management of a unique and significant cave.

B. Cultural Resources

- Surveys
 - This project will involve cultural resource surveys.
 - A 106 report and consultation will also be completed.
 - Cultural resources will be identified and recovered/protected
- National Register (eligible or currently approved)
 - The project area is likely eligible for the National Register
- Protection/Site Stewards

- This project will involve the protection and stabilization of cultural resources within the cave in question.
- Restoration/Stabilization
- This project will involve the protection and stabilization of cultural and paleontological resources within the cave in question.
 - Project includes tribal involvement and/or consultation
 - Planning for this project has involved coordination and consultation with multiple tribal governments and their staff.
 - Tribal consultation and coordination will occur throughout the project life.
 - The budget for this project includes funding to support tribal monitors to be a part of the project as needed.

C. Public Health and Safety

- Information Kiosks and Signs
 - This project will involve the placement of signs or kiosk to interpret cave, cultural, and paleontological resources in the area.
 - Signs will also be placed to protect this particular cave and its resources.
- Project addresses and mitigates adverse impacts to resources caused by the volume of people using the resource
 - This project will protect the critical resource within this cave.
 - This project will also provide interpretive and educational materials to the public to help protect these significant resources.
 - This project will facilitate safe recreational spelunking activities that do not damage additional cave resources.

4. Project has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project

A. In-kind contributions may include:

- This project will involve multiple cooperative agreements. Under these cooperative agreements the partners will provide a minimum of 20% match which is typically covered by salary contributions.
- The exact amount of the contributed funds is currently not known and will be determined as the cooperative agreements are developed.
- This project will also involve volunteers throughout the process. The number of volunteers and estimated value of volunteer time is not currently known.

5. Advances the Agency/Entity Priorities/Goals

- See the responses Above

6. Consistence with Executive Orders (EO) and Secretarial Orders (SO)

- See the responses Above

Maps:

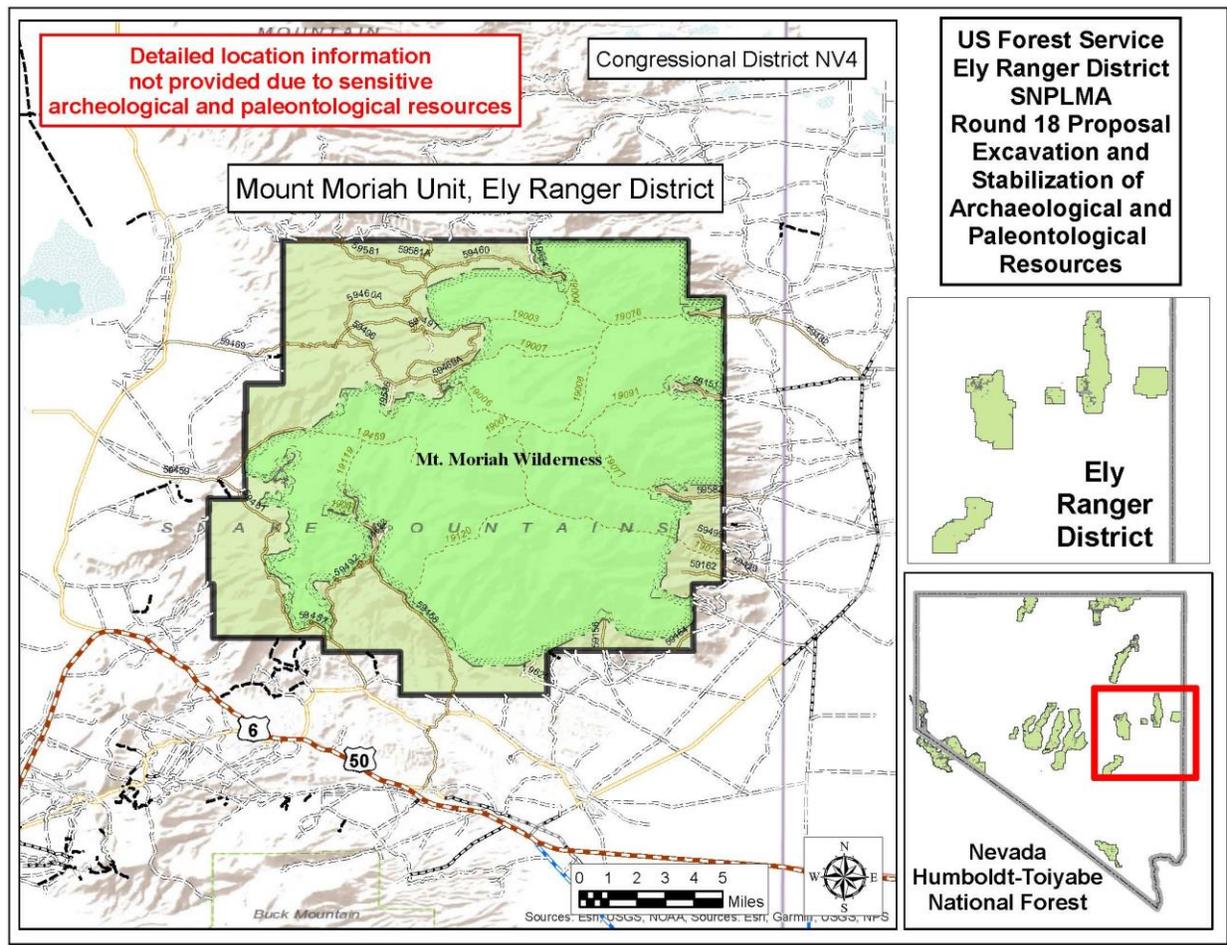


Figure 1 General location map.

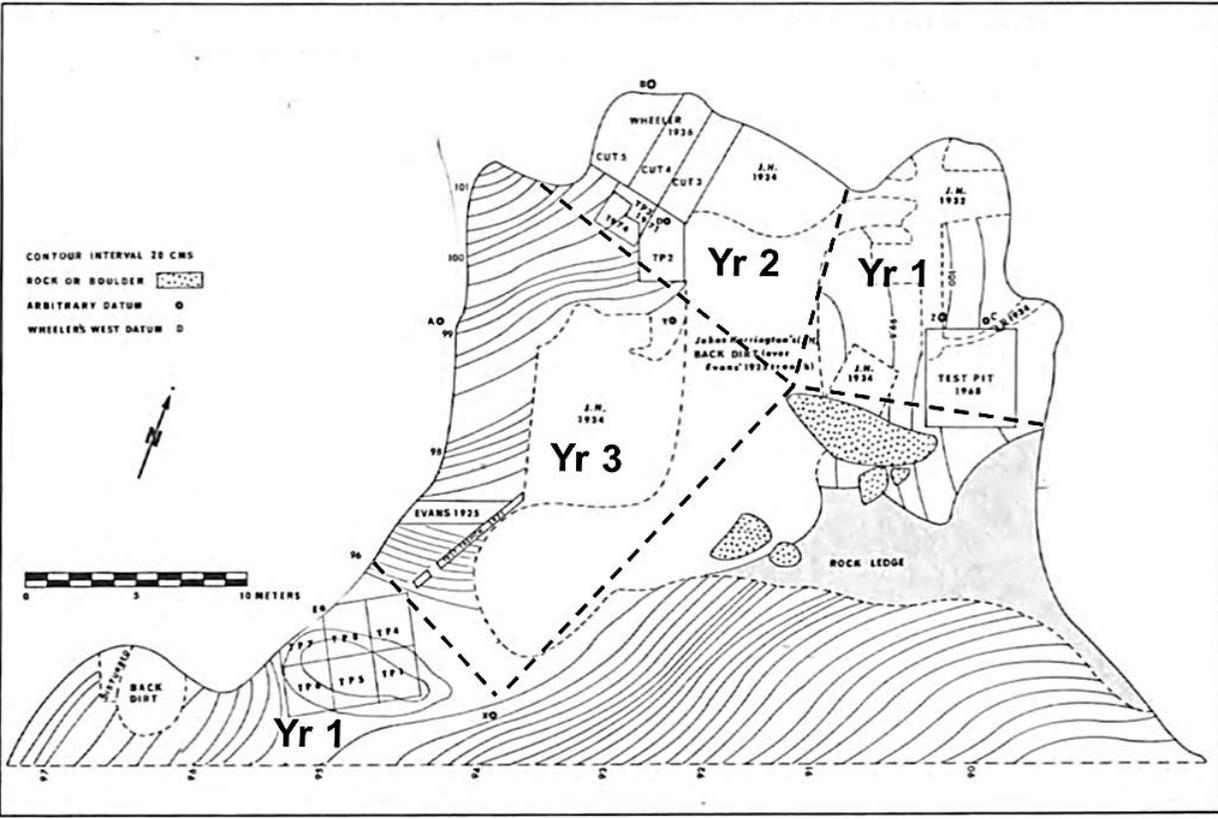


Figure 2 Plan view of the Cave showing test pits and history of excavation. Areas excavated by dash lines indicate those portions of the cave that will be excavated and stabilized each year.

Photos:

Figure 3 View of entrance to the cave.



Figure 4 Floor of cave showing profiles from previous excavations, slumped sediments, and backdirt piles in July 2019

Letters of Support:

- (1) National Park Service
- (2) Nevada Museums and History
- (3) Natural History Museum, Vertebrate Paleontology Section
- (4) University of North Carolina, Wilmington
- (5) American Alliance of Museums, The Mammoth Site



United States Department of the Interior

NATIONAL PARK SERVICE
Great Basin National Park
Baker, Nevada 89311-9701

Jose Noriega, District Manager
Ely Ranger District
US Forest Service
825 Avenue E
Ely, NV 89301

August 12, 2020

Dear Mr. Noriega:

I am writing in support of the USFS R18 SNPLMA proposal, "Excavation and Stabilization of Archeological and Paleontological Resources, White Pine County, Nevada." This project would help protect cave resources that are at risk. It would also help us better understand what this landscape was like in the past.

The USFS and NPS have had a good long-term relationship about managing the resources on our lands. We understand that this project, while conducted on USFS-managed lands, would also benefit the NPS because the knowledge gained would be for the whole region. Learning more about the people and animals that lived nearby during previous times, including during the Lake Bonneville time period, will help the Park be able to better interpret the entire Great Basin Region, which is in its enabling legislation. This information will also help us put what we find in the caves the NPS manages into better context.

Sincerely,

James Woolsey
Superintendent



NEVADA MUSEUMS & HISTORY
 Steve Sisolak | Governor
 Myron Freedman | Acting Administrator

NEVADA STATE MUSEUM
 600 North Carson Street
 Carson City, NV 89701
 Myron Freedman, Director

Mr. Jose Noriega, District Ranger
 Ely Ranger District
 Humboldt-Toiyabe National Forest
 825 Avenue E
 Ely, NV 89301

August 6, 2020

RE: U.S. Forest Service's SNPLMA proposal for Cave Excavation and Stabilization.

Dear Mr. Noriega:

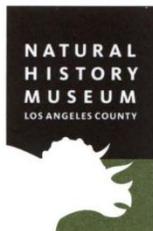
The Nevada State Museum, Carson City (NSM), fully supports the U.S. Forest Service's (USFS) Southern Nevada Public Lands Management Act (SNPLAMA) proposal for "Excavation and Stabilization of Unique Archaeological and Paleontological Resources, White Pine County, Nevada." NSM is a principal repository for archaeological and paleontological resources from federally managed public lands in northern Nevada counties, including White Pine County. Additionally, the museum conducted archaeological research throughout the state beginning in the early 1950s. We are, therefore, well aware of scientific and cultural values associated with both cultural and paleontological resources. Our experience also includes knowledge of continuing loss or degradation of protected cultural and paleontological sites to vandalism, intentional looting, and natural geological processes.

The Nevada State Museum supports USFS' goals outlined in their proposal. The end products would be welcomed by archaeologists and paleontologists. Native American communities would also benefit from site recording, site stabilization and report findings. Please contact me (ghattori@nevadaculture.org; 775.687.4810 ext. 230) if I can provide further support for your project.

Sincerely,

Eugene M. Hattori, Ph.D.
 Curator of Anthropology

A DIVISION OF THE NEVADA DEPARTMENT OF TOURISM AND CULTURAL AFFAIRS |
 CARSONNVMUSEUM.ORG



Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

29 July 2020

Robert Taylor, Program Manager
Bureau of Land Management
SNPLMA Division
4701 North Torrey Pines Drive
Las Vegas, NV 89130

Dear Mr. Taylor:

The Vertebrate Paleontology Department of the Natural History Museum of Los Angeles County (LACM) supports the U.S. Forest Service's (USFS) Conservation Initiative for Round 18 of the Southern Nevada Public Land Management Act (SNPLMA) proposal on "Excavation and Stabilization of Unique Archeological and Paleontological Resources, White Pine County, Nevada".

It is our understanding that this proposal is to excavate and stabilize *in situ* sediments at a unique cave, providing additional material to curate and house, as well as allowing for a more detailed analysis of the contained fauna. We have several vertebrate fossil localities from White Pine County and more than six decades of curation effort on Nevada caves and other nearby localities. We greatly welcome the opportunity to expand the collections, make them available to all audiences and communities, and research their context to extend knowledge of the prehistorical biodiversity of the region. These new materials will allow us to engage volunteers, students and emerging professionals in collections management to preserve this documentation of our natural history heritage for current and future generations.

Should you have any questions or require additional information to further support the nomination, please do not hesitate to contact me at smcleod@nhm.org.

Sincerely,

A handwritten signature in black ink that reads "Samuel A. McLeod". The signature is written in a cursive, flowing style.

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology



UNIVERSITY OF NORTH CAROLINA WILMINGTON

601 S. College Road Wilmington, NC, 28403, USA

30 July 2020

Robert Taylor, Program Manager
Bureau of Land Management
SNPLMA Division
4701 North Torrey Pines Drive
Las Vegas, NV 89130

Dear Mr. Taylor:

I am a vertebrate paleontologist and have extensive experience working on fossil sites and caves in the western U.S. and eastern Nevada. I am writing to provide my wholehearted support for the U.S. Forest Service's (USFS) proposed Conservation Initiative for Round 18 of the Southern Nevada Public Land Management Act (SNPLMA) titled "Excavation and Stabilization of Unique Archeological and Paleontological Resources, White Pine County, Nevada".

Caves in this region of Nevada hold valuable archives of archaeological and biological information, including well preserved fossils of extinct species from the last Ice Age. This record provides insight into the rich biodiversity that once existed in the eastern Great Basin. One such site proposed for additional research in this project is Smith Creek Cave. This cave has already proven to be one of the richest last Pleistocene fossil localities in the western U.S., and certainly in the Great Basin itself. However, since it was first excavated in the 1950s, this cave has suffered from disturbances from pothunters, erosion of exposed trench walls, and rodent burrowing. It also is a popular locale for spelunkers and other recreational activities. Here, the USFS is proposing to salvage slumped sediments to recover valuable archaeological and paleontological resources, then shore up and stabilize remaining *in situ* sediments from further damage and loss. Signage and other educational activities will further allow the public to learn about the value of cave resources and the need for their protection and preservation. The scientific knowledge gained from this work will enhance our understanding of past communities and the unique record in the eastern Great Basin. Finally, the cave will be recognized for its importance when nominated to the Nevada State Register of Historic Sites. Thus, this project warrants funding and fits well within the scope and spirit of the Conservation Initiative of the SNPLMA. Thank you.

Regards,

A handwritten signature in cursive script that reads "Steven D. Emslie".

Steven D. Emslie, Professor
Department of Biology and Marine Biology
Office: (910) 962-3357
E-mail: emslies@uncw.edu



The Mammoth Site

501 (C)(3) nonprofit research organization
1800 US-18 BYP P.O. Box: 692
Hot Springs, SD 57747 United States

TO: Robert Taylor, Program Manager
Bureau of Land Management
SNPLMA Division
4701 North Torrey Pines Drive
Las Vegas, NV 89130

FR: Dr. Jim I. Mead
Director of Research
jmead@mammothsite.org

Dear Mr. Taylor:

I have been working on vertebrate fossils of the Ice Age for the past 46 years as a professor and now Director of Research at a research institution (The Mammoth Site). Much of my field work and resulting publications have been about the Ice Age of the North American west including the Great Basin, Colorado Plateau, Grand Canyon, Black Hills, southern Arizona into northern Sonora, Mexico, and southwestern Texas. Although I have worked many types of localities, caves and rock shelters have been my primary source for fossils and related data for reconstructing the environments and climate of the past 500,000 years of Earth history.

I am writing to you to provide my complete support for the U.S. Forest Service's proposed Conservation Initiative for Round 18 for the Southern Nevada Public Land Management Act with the proposed title "Excavation and Stabilization of Unique Archeological and Paleontological Resources, White Pine County, Nevada." Caves, shelters, and dry rock crevices in the many Nevada mountain ranges have produced a wealth of Ice Age information for decades and only now is this formation really beginning to come together. Although each faunal assemblage from a cave locality is important, Smith Creek Cave clearly holds a unique standing not only for Nevada but for the entire Intermountain West region. The abundance and diversity of the species found in that cave is impressive. It holds the holotype of new species of birds and the extinct mountain goat. I remember visiting the cave in the late 1970s and a number of times since then. I am concerned that the deposits are decaying and getting degraded by visitors and just general geological breakdown. With the wealth of new technology available now and the need for stabilization, the proposed timing to conduct new work in Smith Creek Cave is ideal. And the gained information can be turned immediately into visitor enhancement along with general public education. The proposed project warrants funding.

Many thanks for your time on this.



Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

United States Department of the Interior
U.S. Fish and Wildlife Service
Desert National Wildlife Refuge



Habitat Restoration, Protection, and Stewardship

Amount Requested \$2,051,923

Congressional District NV-4
Timeframe: 5 years
Location: 36.437715° / -115.359982°

Project Manager: June Chiu
Wildlife Biologist
Jennifer_t_chiu@fws.gov
Desert national Wildlife Refuge
U.S. Fish and Wildlife Service
(702) 879-6110
(702) 879-6114 fax

Purpose Statement:

The U.S. Fish and Wildlife Service, Desert National Wildlife Refuge (DNWR) will restore and/or enhance upland habitat, protect valuable wildlife and plant habitat from disturbance by visitors, improve trail surfaces, and develop and implement a sustainable stewardship program that will recruit and inspire a diversity of people to engage in the restoration and protection of wildlife habitat on and off the refuge.

Background info to support the need:

The outflow from Corn Creek Spring supports the only perennial stream on the 1.5 million-acre DNWR and provides riparian habitat critical for migratory birds and other wildlife, including small mammals, reptiles, amphibians, and insects. Corn Creek and the surrounding area has been designated an Important Bird Area (IBA) by the National Audubon Society. The Corn Creek IBA “has the highest density of nests and breeding pairs/ha of Leconte's and Crissal Thrashers in the region. Other species, such as Gambel's Quail, Gray Flycatcher, Loggerhead Shrike, Brewer's Sparrow, Lucy's Warbler, Sage Sparrow, and Phainopepla also utilize the vegetative communities within the key habitats within the IBA. During the migratory period, peak counts have 89 species migrating through the area.” (<https://www.audubon.org/important-bird-areas/corn-creek-iba>).

The site includes a historical orchard with fruit trees and grassy areas irrigated with a sprinkler system. The combination of the riparian vegetation, orchard trees, grassy areas, and surrounding Mojave Desert upland vegetation provides a diversity of habitat that supports the highest biodiversity on the DNWR.

The Corn Creek area is the primary destination for visitors to the DNWR. The visitor center and approximately 1.4 miles of trails provides opportunities for visitors to learn about DNWR and the natural and cultural resources that it protects, and engage in wildlife-dependent recreational activities, such as wildlife observation and photography, and environmental education and interpretation.

The quality of habitat in the Corn Creek area has degraded overtime, due to stands of trees becoming diseased and/or senescent, vegetation mortality occurring in some areas, the invasion and/or expansion of non-native plants, and trampling by visitors walking off designated trails. Recent increase in visitation, especially during the COVID-19 pandemic, has resulted in the expansion of habitat disturbance and degradation from off-trail visitor activities.

Corn Creek provides the only reliable source of water and riparian vegetation on the refuge, which supports important breeding and stopover habitat for migratory birds. The visitor center and associated trails, attract the greatest number of visitors to the refuge. The scope of work includes; (1) restoring and/or enhancing upland vegetation adjacent to the trails, and in the orchard and old pasture area, (2) improving the irrigation system for the orchard area, (3) installing physical barriers and signs to encourage visitors to stay on designated trails and protect plant and wildlife habitat, (4) improving trail surfaces where necessary to make them safer and more accessible to visitors, and (5) develop and implement a sustainable stewardship program

that will enable and encourage a diversity of people from local communities to aid and support the restoration and protection of habitat.

Relationship to prior approved phases or related SNPLA projects and description of anticipated phases:

There have been multiple Capital Improvement Projects at the Corn Creek site, including construction of the visitor center and administrative offices, construction of the maintenance facility, and trail development and construction.

Deliverables:

Primary deliverables

- Develop and implement a stewardship program that will provide on-the-ground assistance with habitat restoration and protection efforts, provide interpretation for visitors, and lead stewardship projects throughout the project period and beyond. This will include partnerships with Nuwui tribes, local schools and colleges, and NGOs.
 - Identify suitable stewardship partners.
 - Plan and implement stewardship activities that will provide hands-on assistance with habitat restoration and protection efforts.
 - Develop and implement stewardship activities that will provide interpretation on the importance of habitat restoration and protection for visitors
- Restore approximately 6 acres of upland habitat, especially in areas where saltbush (*Atriplex sp.*) has died, dead vegetation has accumulated, invasive species are growing, and off-trail visitor activity has degraded habitat.
 - Assess uplands along trails, the orchard area and adjacent grassy areas, and the old pasture, and identify habitat restoration and/or enhancement needs.
 - Collaborate with Nuwui tribes on applying traditional ecological knowledge to restoration planning and implementation. Complete identified habitat restoration and enhancements.
 - Assess irrigation system and determine if changes or improvements need to be made to ensure adequate and sustainable irrigation. Complete improvements, if necessary.
 - Identify and map invasive plant species and treat with herbicide or mechanically remove.
- Protect habitat along trail system from off-trail use and disturbance by visitors.
 - Identify habitat along trails that is being impacted by off-trail use.
 - Develop and install barriers and other protective measures to deter visitors from walking off trails.
 - Develop and install interpretive signs to inform visitors of habitat importance and restoration efforts and encourage them to stay on trails.
 - Improve surfaces of trails, where needed.

Anticipated deliverables

- None

Standard deliverables

- Environmental permitting
 - National Environmental Policy Act
 - Section 106 of the 106 of the National Historic Preservation Act
 - Section 7 of the Endangered Species Act, etc.
- Contract, cooperative agreement, and budget management, including but not limited to developing scopes of work, writing bid requests, reviewing proposals/bids, providing technical representation for Contracting Officer, inspecting work, reviewing and approving invoices, and compiling budget information throughout project duration.
 - Project management by temporary cooperator or temporary personnel with restoration specialty to oversee or implement project activities and deliverables (particularly restoration)
 - Conduct appropriate reviews throughout different stages of deliverables, coordinate with other agency personnel or contractors, and ensure sufficient progress throughout the duration of the project.
 - Project Manager/Restoration Specialist would work full time on restoration efforts for four years.

Project Timeframe:

Environmental compliance and planning will be completed in the first year and implementation through closeout will occur over the following 4 years.

Implementation Schedule:

Deliverable	Year 1	Year 2	Year 3	Year 4	Year 5
Develop and implement stewardship program	Planning and development	Implement stewardship program	Continue stewardship program		
Restore and enhance approximately 6 acres of habitat	Planning, design, native seed collection, remove nonnative trees, plant native trees	Remove dead vegetation, plant native trees and other plants, monitor and maintain plants, and remove or treat invasive plants, install irrigation system	Remove nonnative trees, plant native plants, monitor and maintain plants, and remove or treat invasive plants	Plant native plants, monitor and maintain plants, and remove or treat invasive plants	Plant native plants, monitor and maintain plants, and remove or treat invasive plants
Install habitat protection barriers and	Planning and design	Complete barrier installation	Install interpretive signs		Final Documentation

signs, and improve trail surfaces		and trail improvements			and Closeout
Environmental compliance	NEPA, Section 106, and ESA				Final Documentation and Closeout
Contract, agreement, and budget management	Throughout project duration.				
Project management	Throughout project duration.				

Level of Readiness for Implementation

The Service, DNWR is prepared to complete project. FWS staff completed an assessment of the work and the required timeline, in consultation with a habitat restoration and protection specialist.

Future Operations and Maintenance:

The FWS is responsible for all future operations and maintenance costs.

Partnerships and/or contributed funds:

Volunteers will assist with the stewardship program and interpretation for visitors. The estimated volunteer hours throughout the life of the project is 2000 hours, approximately \$50,860. Approximately 500 hours will be provided for project implementation and management oversight by agency-funded staff, approximately \$40,500.

The total value of contributed funding is approximately \$91,360.

The remainder of this page intentionally blank

Funding Summary:

ROUND 18			
CONSERVATION INITIATIVES NOMINATION			
ESTIMATED DIRECT COSTS & KEY MILESTONES			
Project Name:	Habitat Restoration, Protection, and Stewardship	Date prepared:	9/10/2020
Project #		Agency:	USFWS
Prepared by:	Kevin DesRoberts	Priority #:	
Title/position:	Project Leader	Phone #:	702-515-5451
1 Planning & Environmental Documentation		\$66,520	3.24%
Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)			
2 FWS Consultation - Endangered Species Act		\$13,760	0.67%
Direct expenses or FWS consultation, if required.			
3 Direct Federal Labor to Implement Project (Payroll)		\$797,260	38.85%
For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.			
4 Project Equipment and/or Supplies and Materials		\$189,650	9.24%
Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.			
5 Travel and Per Diem for Implementation		\$0	0.00%
Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below			
6 Official Vehicle Use (vehicles with Federal license only)		\$275	0.01%
Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost			
7 Training (required to implement the project)		\$0	0.00%
Includes training essential/necessary for implementation of the project.			
8 Contracts, Grants, and/or Agreements		\$984,458	47.98%
CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan.			
9 Other Necessary Expenses		\$0	0.00%
(See Appendix B-11)			
Total requested/estimated budget		\$2,051,923	100.00%
10 Estimated agency or partner contribution		\$91,360	
Total Estimated project value		\$2,143,283	

Performance Measures:

Strategic Goal 1, Objective #1: Conserve and Restore Natural Resources – Maintain or increase the quality of natural resources and protect their ecological integrity and sustainability.

- Outcome: Sub-Objective 1.1 – Increase or improve the resource base (e.g., habitat), with a focus on regional landscape habitat restoration.
 - Output (Primary Deliverable): Project will restore, enhance, and protect approximately 6 acres of plant and wildlife habitat, and protect ecological integrity and sustainability within a designated IBA on the DNWR.
 - Performance Measure H4 – Estimated Acres of Upland Habitat Treated, Enhanced, or Restored: 6 acres
 - Performance Measure H9 – Estimated Acres of Invasive Plant Species Treated or Restored: 6 acres
 - Performance Measure H16 – Estimated Miles of Roads or Trails Decommissioned and/or Rehabilitated: 1 mile

Strategic Goal 1, Objective #3: Promote Project connectivity and sustainability – Integrate and connect sustainable projects across agencies, landscapes, and previous projects that are sustainable within the outdoor environment.

- Outcome: Sub-Objective 3.1 – Demonstrate the connection between prior and new projects, to the habitat and ecosystems across regional landscapes.
 - Output (Anticipated Deliverable): This project will enhance connectivity and sustainability of projects funded during previous SNPLMA rounds for the Corn Creek area of the Refuge. Previous projects completed include construction of the visitor center and associated interpretive trails and riparian habitat reconstruction and restoration along the Corn Creek spring outflow. At the larger landscape level, this project restores and enhances habitat that contributes to supporting ecosystem function and meeting the needs of wildlife, especially migratory birds.

Strategic Goal 2, Objective #6: Enhance Recreational Opportunities – Provide recreational opportunities and improve access to those opportunities on Federal, State, local and regional government lands by increasing the availability and quality of public recreation.

- Outcome: Sub-Objective 6.1 – Protect or improve the integrity of environmental, cultural, historical, educational, community, recreational, and open space resources to enhance the quality of the human experience.
 - Output (Primary Deliverable): This project will improve access for recreational opportunities while protecting the integrity of plant and animal habitat and reducing disturbances to wildlife and damage of vegetation. Trail surfaces will be improved to improve accessibility. Installation of barriers and interpretive signs along trails will protect habitat. Through the development and implementation of a stewardship program, a diversity of partners and local community members will be actively engaged in habitat restoration, protection, and interpretation throughout the duration of the project and into the future.

- Performance Measure H16 – Estimated Miles of Roads or Trails Decommissioned and/or Rehabilitated: 1 mile
- Performance Measure O5 – Estimated Number of Outreach Contacts Made: 50,000 hours
- Performance Measure O6 – Estimated Number of New Interpretive or Education Publications/Signs/Kiosks/Displays/etc. 10 each

Executive Committee Strategic Plan Values:

- A. Sustainability:
 - a. The project will restore and enhance upland habitat and protect valuable wildlife and plant habitat located within the Corn Creek IBA on the DNWR
- B. Connectivity.
 - a. The outflow from Corn Creek Spring provides riparian habitat that is critical for migratory birds
- C. Community.
 - a. The visitor center and approximately 1.4 miles of trails at Corn Creek provides opportunities for visitors to learn about the DNWR, the natural and cultural resources, and engage in wildlife-dependent recreational activities, such as wildlife observation and photography, and environmental education and interpretation.

Compliance with Departmental Priorities, Strategic Goal, Executive Orders (EO), or Secretarial Orders (SO).

- Executive order #13855: Promoting Active Management of America's Forests, Range Lands to improve conditions and reduce wildfire risk.
 - NA
- DOI Priority #1: Create a conservation stewardship legacy second only to Teddy Roosevelt.
 - This project will restore and enhance upland habitat and protect valuable wildlife and plant habitat.
- DOI Priority #2: Sustainably develop our natural resources.
 - NA
- SO No. 3347: Conservation Stewardship and Outdoor Recreation
 - It will enhance conservation stewardship by directly engaging a diversity of partners local community members in habitat restoration, protection, and interpretation on the DNWR.
- SO No. 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes and Territories
 - It will enhance conservation stewardship by directly engaging a diversity of partners, including Nuwuvi tribes, and local community members in habitat restoration, protection, and interpretation on the DNWR

- *SO No. 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors*
 - NA
- *SO. 3366: Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior*
 -
- *SO No. 3370 Improving Conservation Stewardship and Increasing Public Access to Urban National Wildlife Refuges*
 - The FWS will engage partners, including Nuwuvi tribes, and local community members in habitat restoration, protection, and interpretation on the DNWR
- *SO No. 3372 Reducing Wildfire Risks on Department of the Interior Land Through Active Management*
 - NA
- *SO No. 3374 Implementation of the John D. Dingell, Jr. Conservation, Management and Recreation Act*
 - NA
- *SO No. 3376 Increasing Recreational Opportunities through the use of Electric Bikes*
 - NA

Ranking Criteria

- *Criteria #1: The nomination supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability*
 - This project will enhance and restore valuable plant and wildlife habitat while addressing landscape connectivity requirements for wildlife, especially migratory birds, and contributing to regional landscape level habitat restoration goals. Restoring, enhancing, and protecting habitat will contribute to the sustainability of plants and wildlife in the project area, and migratory wildlife that use the area to meet seasonal life history requirements.
- *Criteria #2. The nomination promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support*
 - The project will promote sustainability by restoring and enhancing habitat that has been degraded and protecting habitat from future impacts by off-trail visitor uses. The actions that will be implemented will contribute to conserving and sustaining healthy and resilient landscapes that provide important plant and wildlife habitat. Through assistance with completing the project and active stewardship, diverse members of local communities will ensure durability, relevancy, and shared support in the long-term.

- *Criteria #3. The nomination promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites.*
 - This project will restore, enhance, and protect habitat, which will improve and protect the integrity of biological communities that support the greatest biodiversity on the DNWR and enriches visitor experiences, especially through connecting with nature and observing wildlife. Establishing a stewardship program will provide opportunities for a diversity of people from local communities to become actively engaged in protecting the integrity of biological communities and develop connections to the greater community of species on the planet.

- *Criteria #4. The nomination promotes sustainability, connectivity, and community by connecting people to nature and recreational opportunities by uniting communities with important places across the landscape. The nomination enhances partnerships to promote cooperation and collaboration.*
 - This project will restore, enhance, and protect plant and wildlife habitat throughout the trail system in the Corn Creek area, which is the most visited area on the DNWR. Opportunities for people to connect with nature and to this important place will be enhanced and more sustainable. Through participating in the stewardship program, people from local communities will be able to be actively engaged in restoring and protecting habitat, and provide interpretation to other visitors. This will assist with uniting and connecting communities with the DNWR and other important places across the landscape.

- *Criteria #5. The nomination has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project*
 - An estimated \$91,360 of in-kind contributions is projected for planning, development, and implementation of the project. This will include volunteer time associated with implementing habitat restoration, stewardship projects, and providing interpretation for visitors. It will also include Service staff time associated with native seed collection, native plant monitoring and maintenance, contracting, agreements, environmental compliance, and project oversight.

- *Criteria #6 Advances the Agency/Entity Priorities. The proposed project specifically identifies what and how the nomination/project meets the priorities and strategic goals for their respective agency.*
 - Yes

- *Criteria #7. Consistency with Executive (EO) and Secretarial Orders (SO). The proposed project specifically identifies what and how the nomination/project meets the EO and/or SOs.*
 - Yes

Maps



Figure 1 Project area.

Photos:

Figure 2 Stream bank degradation due to trampling and social trails



Figure 3 Orchard lacking understory plants

Letters of support:

1. Friends of Nevada Wilderness
2. Southern Nevada Conservancy
3. Red Rock Audubon (2 p)

September 9, 2020

Robert Wandel
 Conservation Initiatives Program Manager
 SNPLMA Division
 Bureau of Land Management
 4701 N. Torrey Pines Dr.
 Las Vegas, NV 89130



FRIENDS of NEVADA WILDERNESS

I am writing to support the nomination by the U.S. Fish & Wildlife Service for Habitat Restoration, Protection, and Stewardship of the Corn Creek area of the Desert National Wildlife Refuge. The project is being nominated to restore and prevent damage to valuable wildlife and plant habitat by engaging community members in meaningful stewardship.

The Corn Creek area provides vital riparian habitat for migratory birds and other wildlife, including small mammals, reptiles, amphibians, and insects. With the only perennial stream on the Desert National Wildlife Refuge, the area is so critical that it has been designated as an Important Bird Area by the National Audubon Society. The Corn Creek area is the most visited area of the Desert refuge and an important site for a variety of recreation, such as birdwatching and photography, and one of few public lands sites in southern Nevada that has truly accessible trails.

Public lands visitation has increased immensely during the COVID-19 pandemic and at Corn Creek, that increased use is resulting in damage to this important habitat and recreation site. Visitors are trampling habitat by walking off trail and spreading invasive plants. Addressing these issues swiftly will be key in preventing immense, compounding damage. Engaging community members to restore and improve the Corn Creek area will create everyday advocates for the site. When people use their muscles and spend time stewarding their public lands, they gain a greater sense of connection to and become more invested in them. They then visit outdoor places with purpose and help others learn the ethics that should be used in outdoor places.

Please feel free to contact us with any questions or for further information.

Thank you,

Grace Palermo
 Southern Nevada Programs Director
 Friends of Nevada Wilderness

September 10th, 2020



Robert Wandel
 Conservation Initiatives Program Manager
 SNPLMA Division
 Bureau of Land Management
 4701 N. Torrey Pines Dr.
 Las Vegas, NV 89130

Re: SNPLMA Round 18 Grant Proposal – Desert National Wildlife Refuge Habitat Restoration, Protection and Stewardship

Southern Nevada Conservancy would like to express our support for Desert National Wildlife Refuge Habitat Restoration, Protection and Stewardship proposal authored by the US Fish and Wildlife Service.

The Desert National Wildlife Refuge has been one of southern Nevada’s best kept secrets until recently. The Corn Creek area, which houses the Refuge’s visitor center, is one of the best places in southern Nevada to see and experience a natural riparian area in the Mojave desert along with the wildlife that inhabit the area. The proximity of Las Vegas has drawn much more attention to the area as visitors found public lands as their only means of recreation as the COVID-19 pandemic spread. Additionally, Corn Creek serves as the only “front-country” experience as much of the Desert Refuge is quite rugged where experience and planning is required.

Unfortunately, with increased visitation comes increased impact from those visitors. Visitors have trampled on vegetation, created user routes, both foot and motorized, and damaged wildlife habitat.

The response to the increased visitation is much needed as impacts will only increase over time. The inclusion of local stewards and on-the-ground education are excellent methods to avoid negative behaviors into the future.

Southern Nevada Conservancy values the goals sought to be achieved through this proposal and applauds the actions by the Fish and Wildlife Service to enact a plan to protect the natural and cultural values of the Corn Creek area in the Desert National Wildlife Refuge

Please feel free to contact us with any questions or further information.

Thank you,

Jose Witt
 Executive Director
 Southern Nevada Conservancy
 jwitt@snconservancy.org



Red Rock Audubon's mission is to bring people together for the conservation and enjoyment of birds, other wildlife, and the natural world throughout Southern Nevada and neighboring areas.
P.O. Box 96691 Las Vegas, Nevada 89193

September 11th, 2020

Bureau of Land Management
SNPLMA Division
4701 N. Torrey Pines Dr.
Las Vegas, NV 89130

Attention: Mr. Robert Taylor – Program Manager

RE: SNPLMA Round 18 Project for Corn Creek

Desert National Wildlife Refuge - Habitat Restoration, Protection and Stewardship

To Whom It May Concern:

The Red Rock Audubon Society (RRAS) supports Desert National Wildlife Refuge's project proposal to restore and/or enhance upland habitat, protect valuable wildlife and plant habitat from disturbance by visitors, improve trail surfaces, develop and implement a sustainable stewardship program that will recruit and inspire a diversity of people to engage in the restoration and protection of wildlife habitat on and off the Refuge.

This project is needed because the quality of habitat in the Corn Creek area has degraded overtime, due to stands of trees becoming diseased and/or senescent, vegetation mortality occurring in some areas, the invasion and/or expansion of non-native plants, and trampling by visitors walking off designated trails. Recent increases in visitation, especially during the COVID-19 pandemic, have resulted in the expansion of habitat disturbance and degradation from off-trail visitor activities.

The outflow from Corn Creek Spring supports the only perennial stream on the 1.5 million acre Desert National Wildlife Refuge (Refuge) and provides riparian habitat that is critical for migratory birds and other wildlife, including small mammals, reptiles, amphibians, and insects. Corn Creek and the surrounding area has been designated an Important Bird Area (IBA) by the National Audubon Society. The Corn Creek IBA "has the highest density of nests and breeding pairs/ha of Leconte's and Crissal Thrashers in the region. Other species, such as Gambel's Quail, Gray Flycatcher, Loggerhead Shrike, Brewer's Sparrow, Lucy's Warbler, Sage Sparrow, and Phainopepla also utilize the



Red Rock Audubon's mission is to bring people together for the conservation and enjoyment of birds, other wildlife, and the natural world throughout Southern Nevada and neighboring areas.
P.O. Box 96691 Las Vegas, Nevada 89193

vegetative communities within the key habitats within the IBA. During the migratory period, peak counts have 89 species migrating through the area.”
(<https://www.audubon.org/important-bird-areas/corn-creek-iba>).

Red Rock Audubon, is a Southern Nevada chapter of the National Audubon Society with over a thousand members. We have a long history and productive relationship with the Desert National Wildlife Refuge. Our community outreach and community science programs include the annual Christmas Bird Count, Junior Duck Stamp Program and field trips.

The successful achievement of this project goals will support the accomplishment of our chapter's mission.

Please contact me directly at 702-349-7848 or email me at president@redrockaudubon.com if you have further questions about RRAS's support of this project. Thank you for seriously considering Desert National Wildlife Refuges' application for this funding.

Sincerely,

A handwritten signature in black ink that reads "Paul D. Rodriguez". The signature is written in a cursive style and is positioned above a horizontal line.

Paul Rodriguez
President
Red Rock Audubon Society

Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

United States Department of the Interior
National Park Service
Interior Region 8
Lake Mead National Recreation Area



Historic Hoover Dam Railroad Tunnels

Amount Requested: \$17,045,740

Congressional District NV-3
Timeframe: 5 Years
Location: 36.011966° / -114.793236°

Project Manager: Audrey Asselin
Branch Chief of Engineering
Email address: Audrey_asselin@nps.gov
702-293-8925

Purpose Statement:

The National Park Service, Lake Mead National Recreation Area will restore the historic railroad tunnels at the gateway to Lake Mead which are connected to the nearby urban communities of Southern Nevada to maintain universally accessible standards, and assure recreational access to the historic railroad tunnels. Historic cribbing at the portals will be restored and integrated with the tunnel rehabilitation to provide continued passage along the Historic Railroad Trail for visitors to ensure accessible recreational access, a fee-free recreation opportunity.

Background info to support the need:

The National Park Service began managing Boulder Dam National Recreation area in 1936. In 1947 that name was changed to Lake Mead National Recreation Area (Lake Mead) and it was established for public recreation purposes, to be managed in a manner that preserves, develops and enhances its recreation potential while preserving its important resource values. Lake Mead is America's first and largest National Recreation Area. More than 15 million people enter the park's boundaries annually, making it the sixth most visited park unit. With this Conservation Project, Lake Mead proposes to save and restore the nearly 90-year-old historic railroad tunnels that were built in 1931 to build Hoover Dam from 1931-1935. The Historic Railroad Tunnel Trail winds through five of these historic tunnels. These historic and nationally significant tunnels need to be protected from deterioration and thereby safeguarding a historic treasure and recreational access of the trail system for the future.

The Historic Railroad Trail follows the path of the historic railroad that built Hoover Dam, which was instrumental in bringing water and power to the arid Southern Nevada area fueling growth and development. Along the 7.5-mile roundtrip trail, visitors of all ages and abilities travel through five historic tunnels while connecting with the history of the construction of Hoover Dam and the creation of Lake Mead. Hundreds of visitors have been seen utilizing this trail system at any one time. This site and trail system provide a no-fee, universally accessible, bike, e-bike and dog friendly means to experience the rich history, amazing panoramic views and family recreation opportunities. The Historic Railroad Tunnels Trail system is recognized as Nevada's first Rails-to-Trails project. It is Southern Nevada's only universally accessible trail, and it is one of Southern Nevada's three National Recreation Trails.

The historic railroad tunnels are a critical piece of American history and could soon be lost to time as the wooden structures are rotting and no longer stable. The rock walls and ceilings are deteriorating rapidly, resulting in significant rock fall. In 2019, a rock fall in the tunnels caused closure of the trail system. The park developed a creative solution utilizing shipping containers for visitors to travel through to be protected from rock fall. Shipping containers were added to areas of concern along the trail as a short-term solution. It is urgent that the tunnels be rehabilitated soon to prevent potentially irreversible damage to this national historic resource and to maintain recreational access enjoyed by millions of visitors to the park.

Many of Lake Mead's visitors enjoy hiking and biking along the park's trails, including the iconic Historic Railroad Trail. The trail, located near the Lake Mead Visitor Center, was originally a railroad system built in the 1920s and used to construct the Hoover Dam in the early

1930's. In 1961, the last generator was hauled over the rails and installed at the power plant, and a year later, the tracks were dismantled and sold for scrap. In 1992, the former railroad became a trail and was later recognized as Nevada's first Rails-to-Trails project. The trail was later designated as a National Recreation Trail.

The trail travels through five historic tunnels that link the Lake Mead Visitor Center to the Hoover Dam. Each of the five tunnels are approximately 300 feet in length and 25 feet in diameter. The tunnels were oversized to fit large equipment being transported to Hoover Dam during the 1930s. The tunnels have become an iconic historic destination, showcasing, and bearing witness to one of the most impressive engineering feats in history. Along the way, signs share important moments in Nevada's history associated with the construction of the Hoover Dam and the creation of Lake Mead. This is the only remaining section of the Hoover Dam Railroad system that is not highly disturbed or under water.

In addition to the rich history, the trail provides outstanding views of the lake and the surrounding scenery. It is one of Lake Mead's most popular trails, with hundreds of visitors on the trail at times. It is also the site of 5K walks and races. The trail connects Las Vegas' urban, diverse community to the great outdoors. It also connects to the 34-mile River Mountains Loop Trail, a greater trail system that runs through the park, Boulder City and Henderson. Both the Historic Railroad Trail and River Mountains Loop Trail are National Recreation Trails.

The tunnels are home to Mexican free-tailed bats that are part of the complex ecology of the area, consuming insects and thriving in the unique man-made habitat. As development of the close urban areas intersect with the park's natural areas of animal habitat, some species have found homes in unique places in the park, the tunnel ceilings being areas that have become a logical place for the bats to establish their habitat.

Over the years as the tunnel walls have deteriorated, the park has made repairs. However, in recent years, rock has continued to scale off and create a safety hazard to the public and employees alike. For a period, the park was forced to close the trail due to the safety hazard. The closure brought about numerous complaints from visitors and community leaders. As a temporary measure to safely reopen the trail, shipping containers, with ends opened, were placed in the areas where large quantities of falling rock were noticed.

In 2017, the park enlisted Federal Highways to inspect and report on the tunnels and possible mitigation measures, as well as provide cost estimates. More recently, Lake Mead contracted a Tunnel Specialist to inspect and report on possible remedies and tunnel construction methodology for differing failures within each tunnel. Both reports gave the park a realistic, sustainable plan for implementing a strategy to repair and/or stabilize the internal tunnel system while preserving the historic and natural resource values of the structures. Both reports in noting the on-going deterioration of the historic resource, painted a picture that action is necessary to ensure long-term stability and avoid irreversible damage.

Based on the reports previously mentioned, Lake Mead has assessed that there are construction materials and methods that can be implemented to conserve, secure and stabilize the geological conditions within each tunnel for the next 50 years with little to minimal deferred maintenance.

Preserving these historic tunnels with a long-term, resilient restoration solution will allow visitors to continue experiencing the unique trail history, travelling through the same awe-inspiring tunnels as the railroad that built Hoover Dam.

Relationship to prior approved phases or related SNPLA projects and description of anticipated phases:

Work was completed on the tunnels in 2006, utilizing SNPLMA funding to complete the shotcrete component within the tunnels. Although that stabilization is still in place, other areas that were not structurally supported are sloughing off due to the environmental conditions. With the subsequent inspections, it has been determined that additional structural support within the tunnels is required. The planned supports for the tunnels include U-shaped steel I-beams (steel sets); steel geo-netting paired with rock-bolts and fiber reinforced shotcrete; and steel plating with grout. This project is intended to provide long-term solutions to the whole crown and side areas of each of the five tunnels for a sustainable, resilient, low maintenance solution for 50 years and beyond.

To save the historic resource and maintain recreational access, actions must be taken for all five tunnels. This project can be considered for either all five tunnels or any combination of tunnels, though all five tunnels are in urgent need of action. Gross construction costs for each tunnel are described in the budget detail and below for the construction only components.

Tunnel Number	Gross Construction Cost	Priority
1	\$2,600,000	3
2	\$900,000	1
3	\$4,202,000	2
4	\$2,123,200	5
5	\$2,292,200	4

Deliverables:

- Primary deliverables
 - Stabilize portal wood cribbing while preserving the historic nature of the structure.
 - Structurally secure and stabilize the internal structure of the five tunnels utilizing and involving varying degrees of fiber-reinforced shotcrete applications, rock-bolt installation, steel geo-netting applications, installation of a steel liner plate system, and/or installation of a steel set system.
 - Stabilize portal areas with netting applications along the outside where loose rock is assessed and deemed necessary.
- Anticipated deliverables
 - Provide continued recreational use of the trail and tunnel system to the public.

- Provide resilient preservation and conservation of the historic trail and tunnel system.
- Provide stable habitat for existing population of bat species.
- Maintain universally accessible design standards.
- Standard deliverables
 - NEPA compliance – Conduct Environmental Assessments (EA)
 - NHPA consultation with Nevada SHPO, Section 106 review
 - Conceptual Study Title 1 Engineering Scoping Task Order, Value Analysis and Schematic Design
 - Construction documents including design and specifications for the restoration and stabilization of the five structures, interior, exterior and cribbing structures
 - Construction and installation of restoration and stabilization improvements
 - Construction Inspection
 - Project closeout

Project Timeframe:

The project will be completed in five years.

Level of Readiness for Implementation:

The park has the staffing, expertise, and resources to accomplish this project by utilizing our Engineering staff who will act as Project Managers for the planning, design and construction of this project. The park will consider hiring term positions to supplement the labor pool, as well as utilizing our Regional Staff if needed. The park will utilize current ID/IQ contracts for Conceptual Scoping, Engineering Design (Construction Documents) and Inspection by the Engineer of Record. The park will then solicit the construction projects for the implementation of the new facilities by utilizing our contracting and engineering staff. The park has an Engineering staff that is experienced with construction inspection and contract implementation. Lake Mead Engineering staff includes three licensed engineers, a construction engineer, and a construction inspector. The park plans to hire two more engineering staff in the next year to supplement our existing staff.

Schedule for completion	Description of work
Year 1	Park staff will be used to prepare documentation needed to complete the NEPA compliance and the consultation with the Nevada SHPO. Milestones include the following: <ul style="list-style-type: none"> ● Complete conceptual scoping study, value analysis and schematic design with an Engineering Title 1 Task Order. ● Conduct NEPA Environmental Analysis; Nevada SHPO, Section 106. ● Contract A&E Task Order for construction documents including plans and specifications.
Year 2	<ul style="list-style-type: none"> ● Complete construction documents including plans and specifications.

Year 3	<ul style="list-style-type: none"> • Contract preparation, solicitation, and award. • Contract Title 3 Inspection by Engineer of Record Task Order.
Year 4	<ul style="list-style-type: none"> • Construction and Inspection continues through full build-out.
Year 5	<ul style="list-style-type: none"> • Final acceptance – The project will be accepted by Lake Mead following completion of all construction elements. • Final invoice and release of claims • Internal project closure • Final site inspection with SNPLMA Program Manager. • Final review of project file/expenditures. • Request for close out. • SNPLMA close out of the funding authorization.

Future Operations and Maintenance:

The Park will operate and maintain the restored and stabilized historic tunnels with our park base funds. This project will reduce the O&M costs for areas of the tunnels that have rock sloughing and that are impacted by weather and other natural occurrences by securing the geological structure. The park has prepared for the ability to maintain the restored tunnels with a full Facility Management staff as well as a robust volunteer program. The maintenance will be minimal and periodic inspections of the structures will be conducted by NPS Local and Regional Offices.

Partnerships and/or contributed funds:

The Historic Railroad Tunnel Project will be managed by Lake Mead Engineering Staff and overseen by the Branch Chief of Engineering. Regional staff will be included in contracting, inspections and review of construction documents. The park has also incurred costs for Federal Highways and a Tunnel Expert to inspect and report on the potential needed for repairs and restoration. Those costs totaled \$50,000 in an Interagency Agreement and contract. An in-kind contribution of \$168,800 towards labor managing this project include (*see detailed cost estimate*):

- Supervisory Engineer's salary
- Financial Officer's salary

Remainder of page intentionally blank

Funding Summary:

ROUND 18		
CONSERVATION INITIATIVES NOMINATION		
ESTIMATED DIRECT COSTS & KEY MILESTONES		
Project Name:	Historic Dam Railroad Tunnels	Date prepared: 8/6/2020
Project #		Agency: NPS - LMNR (LAKE)
Prepared by:	Audrey Asselin	Priority #:
Title/position:	Branch Chief of Engineering	Phone #: 702-293-8925
1 Planning & Environmental Documentation		\$ 2,433,360.00 14.28%
	Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)	
2 FWS Consultation - Endangered Species Act		\$42,080 0.25%
	Direct expenses or FWS consultation, if required.	
3 Direct Federal Labor to Implement Project (Payroll)		\$611,920 3.59%
	For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.	
4 Project Equipment and/or Supplies and Materials		\$0 0.00%
	Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.	
5 Travel and Per Diem for Implementation		\$0 0.00%
	Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below	
6 Official Vehicle Use (vehicles with Federal license only)		\$21,600 0.13%
	Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost	
7 Training (required to implement the project)		\$2,000 0.01%
	Includes training essential/necessary for implementation of the project.	
8 Contracts, Grants, and/or Agreements		\$13,934,780 81.75%
	CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan.	
9 Other Necessary Expenses		\$0 0.00%
	(See Appendix B-11)	
Total requested/estimated budget		\$17,045,740 100.00%
10 Estimated agency or partner contribution		\$168,800
Total Estimated project value		\$17,214,540

Performance Measures:

Lake Mead is committed to the SNPLMA Performance Measures of preserving the cultural and natural resources of the Historic Railroad Tunnels by preserving and restoring the historic value of the site. As well as, increasing the opportunity to provide continued universally accessible recreational access and opportunities within the no-fee area.

Outcome: Protect, stabilize, and restore the failing Historic Railroad Tunnels. The following outputs will achieve this outcome:

- Output: Preserve and restore Historic Railroad Tunnels, providing safe and sustainable use of the trail and tunnel system to the public (Anticipated Deliverable)
 - H17 – Miles of Trails Surveyed – 3.5 miles
 - C1 – Number of Historic Structures Stabilized – 5 each
 - O1 – Number of Hazardous Sites Remediated – 5 each
- Output: Design stabilization in a manner that preserves the continued colonization of the existing bat colonies, considering potential bat habitat (Primary Deliverable)
 - H15 – Conservation Actions Implemented for Non-Listed Species – 5 each
 - H17 – Miles of Trails Surveyed and Inventoried for bat species – 0.30 miles
- Output: Design stabilization in a manner that preserves historic characteristics of the tunnels and mitigates negative impacts (Primary Deliverable)
 - H17 – Miles of Trails Surveyed and Inventoried for cultural resources–3.5 miles
 - C1 – Number of Historic Structures Stabilized – 5 each
 - C2 – Number of Cultural Artifacts Protected – 5 each

Executive Committee Strategic Plan Values

A. Sustainability

- a. This project conserves and saves the historic resources and solidifies recreational access on the trail for future generations.
- b. This project restores the functionality and provides a resilient solution for the protection of the historic resource and biological bat community while protecting the visitor along a relevant trail system. This project is a long-term solution that will provide recreational access to this important trail and enjoyment of the historic resource. The project will reduce ongoing short-term expenditures to maintain safe recreational access for visitors.
- c. The five nearly 90-year old tunnels tell the story of the historic building of the Hoover Dam and the creation of Lake Mead. It is the only site of its kind that tells Hoover Dam’s railroad story that started in the early 1930s.

B. Connectivity.

- a. The Historic Railroad Trail has trailheads on both National Park Service and Bureau of Reclamation-managed lands. Stabilizing the tunnels will help both agencies to ensure continued access to this important historic resource. The trail is also a spur to the River Mountains Loop Trail, which is in Lake Mead, and the

cities of Henderson and Boulder City. The conservation of the tunnels and ensuring long-term recreational access to the historic resource will benefit those cities, as well.

- b. The Historic Railroad Trail is used by many organizations, including Girl Scout troops, race coordinators and non-profit organizations that promote accessibility in the outdoors. This project will ensure continued access to the trail and promotes conservation stewardship.
- c. Upon completion of the project, the National Park Service will resume ranger-led hikes for visitors of all abilities and develop interpretative materials to be share the important history of the historic railroad tunnels.

C. Community.

- a. The project will engage visitors in and experience, history, relevance of the construction of Hoover Dam, the creation of Lake Mead, and the development of the surrounding area.
- b. This project ensures current and future visitors will be able to proceed along the Historic Railroad Trail through the five tunnels, connecting with the past, preserving an important link to the history of the Hoover Dam, Lake Mead and the Boulder City area.

Compliance with Departmental Priorities, Strategic Goal, Executive Orders (EO), or Secretarial Orders (SO).

- Executive order #13855: Promoting Active Management of America’s Forests, Range Lands to improve conditions and reduce wildfire risk.
 - NA
- DOI Priority #1: Create a conservation stewardship legacy second only to Teddy Roosevelt.
 - This project honors and continues the vision of Teddy Roosevelt, as he set aside more federal land for national parks than all his predecessors. This project ensures conservation stewardship by saving the historic railroad tunnels from deterioration and ensuring recreational access to the important historic resource. Part of creating and maintaining spaces for recreation and cultural appreciation, is the assurance that visitors use the areas responsibly and impact as little of the natural resources while allowing full enjoyment of the area
- DOI Priority #2: Sustainably develop our natural resources.
 - Lake Mead is one of the nation’s best examples of energy production using natural resources. The water stored within America’s largest reservoir helps tell the story of the Hoover Dam, this project will amplify the messaging by saving the historic tunnels from deterioration and ensuring continued access to the Historic Railroad Trail
- SO No. 3347: Conservation Stewardship and Outdoor Recreation
 - Lake Mead is committed to conservation stewardship by encouraging, promoting, and facilitating continued public access to this historic resource with this project. This project will ensure that current and future generations can enjoy continued recreational access that allows the public to appreciate the rich history of the Hoover Dam, Lake Mead, and the surrounding area.

- SO No. 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes and Territories
 - NA
- SO No. 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors
 - NA
- SO. 3366: Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior
 - This project ensures public lands under the management of the Department of the Interior are open and accessible for recreational pursuits by all Americans and visitors to the United States.
- SO No. 3370 Improving Conservation Stewardship and Increasing Public Access to Urban National Wildlife Refuges
 - NA
- SO No. 3372 Reducing Wildfire Risks on Department of the Interior Land Through Active Management
 - NA
- SO No. 3374 Implementation of the John D. Dingell, Jr. Conservation, Management and Recreation Act
 - NA
- SO No. 3376 Increasing Recreational Opportunities through the use of Electric Bikes
 - The historic tunnels and trail will continue to be available to visitors for their hiking and biking (including e-bikes) experiences.

Ranking Criteria:

- ***Criteria #1: The nomination supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability***
 - Habitat Enhancement.
 - This project supports bat habitat within the tunnels by stabilizing the rock formations that exist in the high ceiling areas.
 - Cultural Resources.
 - This project will save the five historic railroad tunnels from deterioration through restoration and stabilization, preserving the historic value of the wood cribbing and the internal geological structure of the tunnels.
 - Public Health and Safety
 - Currently, the deteriorating structures within the tunnels are creating hazards. Temporary protective measures are in place that have allowed access to be restored for a short time. Though continued deterioration without stabilization will likely impede the ability to continue to provide recreational access to this important historic resource. This project is necessary to address the deterioration of the five tunnels which will allow continued recreational access.

- ***Criteria #2. The nomination promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support***

 - This project conserves and saves the historic resources and solidifies recreational access on the trail for future generations by providing a long-life cycle solution of stabilizing the geological tunnel structures.
 - This project restores the functionality and provides a resilient solution for the protection of the historic resource and biological bat community while protecting the visitor along a relevant trail system and will provide recreational access and reduce deferred maintenance costs.
 - This site of the five nearly 90-year old tunnels tells the story of the historic building of the Hoover Dam and the creation of Lake Mead. It is the only site of its kind that tells Hoover Dam's railroad story that started in the early 1930s. By completing this project with a long-term, resilient, and sustainable solution, it will have not only saved an important historic resource but ensured recreational access for its enjoyment for the next 50 years and beyond.

- ***Criteria #3. The nomination promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites***

 - This site encourages the public to engage in and experience the history and relevance of the construction of Hoover Dam, the creation of Lake Mead and the development of the surrounding area.
 - This project has identified in-kind contributions, as well as past studies and inspections by tunnel restoration experts to identify the scoping and planning requirements for the restoration and stabilization of the tunnels.
 - This project ensures that current and future visitors will be able to proceed along the Historic Railroad Trail through the five tunnels, connecting with the past, preserving an important link to the history of the Hoover Dam, Lake Mead and the Boulder City area.

- ***Criteria #4. The nomination promotes sustainability, connectivity, and community by connecting people to nature and recreational opportunities by uniting communities with important places across the landscape. The nomination enhances partnerships that promote cooperation and collaboration.***

 - The Historic Railroad Trail has trailheads on both National Park Service and Bureau of Reclamation-managed lands. Stabilizing the tunnels will help both agencies to ensure continued access to this important historic resource. The trail is a spur to the River Mountains Loop Trail, in Lake Mead, and the cities of Henderson and Boulder City. The conservation of the tunnels and ensuring long-term recreational access to the historic resource will benefit those cities, as well.
 - The Historic Railroad Trail is used by many organizations, including Girl Scout troops, race coordinators and non-profit organizations that promote accessibility in the outdoors. This project will ensure continued access to the trail, so these organizations can continue their efforts to promote conservation stewardship.
 - Upon completion of the project, the National Park Service will actively promote that the tunnels have been stabilized, will resume ranger-led hikes for visitors of

all abilities, and will develop interpretative materials that will be utilized for sharing the important history of the historic railroad tunnels.

- ***Criteria #5. The nomination has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project***
 - In-kind contributions of salaried employees will be part of this project. In order to implement this project, a team of NPS Engineers will be involved to ensure the proper strategy and implementation within the five-year period.

- ***Criteria #6 Advances the Agency/Entity Priorities. The proposed project specifically identifies what and how the nomination/project meets the priorities and strategic goals for their respective agency.***
 - Yes

- ***Criteria #7. Consistency with Executive (EO) and Secretarial Orders (SO). The proposed project specifically identifies what and how the nomination/project meets the EO and/or SOs.***
 - Yes. See above.

Maps

None.

Remainder of page intentionally blank

Photos



Figure 1 Temporary cargo box installed to provide safe passage through degrading tunnels.

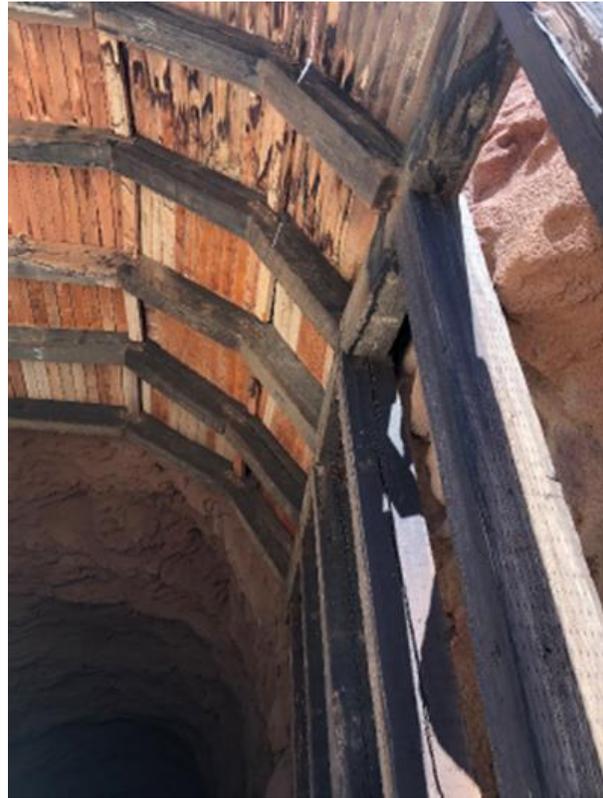


Figure 2 Tunnel 2 showing interior with cribbing at the portal.

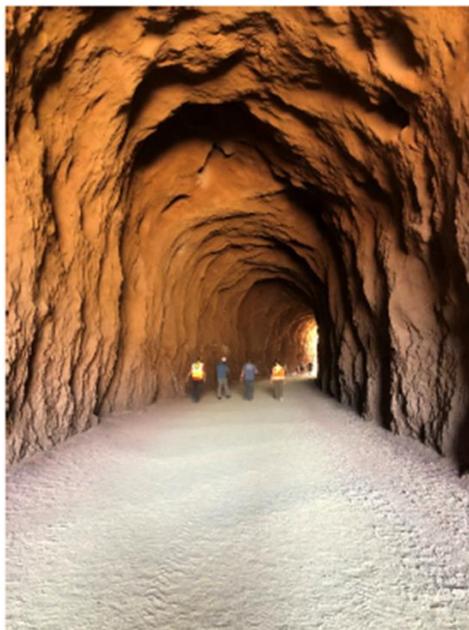


Figure 3 Tunnel 5 with large cathedral in the crown



Figure 4 Example of a steel set with geo-netting solution in areas that require additional structural support.

Letters of Support:

1. Alan O'Neill Letter of Support (2 pp)
2. Bureau of Reclamation (2 pp)
3. Boulder City Mayor (2 pp)
4. Boulder City, Chamber of Commerce (2 pp)
5. City of Henderson (2 pp)
6. Friends of the Nevada Southern Railway, Inc, (2 pp)
7. Outside Las Vegas Foundation (1 p)
8. Guest Services, Inc. (1 p)
9. Lake Mead Estates Association, Inc. (2 pp)
10. National Parks Conservation Association (2 pp)
11. Nevada Department of Tourism and Cultural Affairs (1p)
12. Outdoor Recreation Roundtable (1 p)
13. River Mountain Trail Partnership Advisory Council (1 p)
14. Nevada State Historic Preservation Office (1 p)
15. Bureau of Reclamation for the Southern Nevada Agency Partnership (2 pp)
16. Trail Access Project (2 pp)

September 4th, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

Dear Margaret,

As you know, I served as Superintendent of Lake Mead National Recreation Area for 13 years from 1987-2000. When I retired, I started the Outside Las Vegas Foundation (now rebranded as Get Outdoors Nevada) and served as the Executive Director for 10 years before turning it over to the immensely talented Mauricia Baca. I have followed the park closely over the years and am well aware of the challenges faced by the National Park Service in addressing the needs brought about by budget cuts, lowering lake levels, difficult urban interface issues, and deferred maintenance.

I was so excited when I heard you were submitting some key packages for SNPLMA funding in Round 18. All four initiatives are critically important to bring facilities up to acceptable standards and protect both natural and cultural resources. The improvements to Boulder Beach are long overdue and very exciting as that area is closest to the Las Vegas Valley. We have seen in the covid-19 restrictions how important these close-in recreation facilities are to our diverse publics.

I was also pleased to see the proposal to stabilize and restore the Historic Railroad Trail as that is one of the park's most important cultural resource as well as recreational resource. Being an avid user of Lake Mead's backcountry roads, I can certainly attest to the need to improve those roads by extending them to the lakeshore as well as maintaining them such that they can provide a better visitor experience. When I retired, I made a commitment to myself that I would travel each road. I was astonished to see the beautiful landscapes that those roads exposed. Things were so hectic when I worked at the park that I did not get a chance to travel many of these roads. I was so taken by the scenery that I actually wrote a book entitled, "Outside Las Vegas Hidden Gems" which highlights many of those roads as well as other hidden gems in Southern Nevada. One of the things that I have been concerned with is the state of maintenance on the backcountry roads. With budget cuts, the backcountry road network has not been adequately maintained and a number of roads are nearly impassable at this time. Improving the road network is important to expanding options for recreation users of the Recreation Area, particularly older folks like me who can no longer backpack into the wilderness but enjoy being out in more isolated areas.

Lastly, I was pleased to see that you are proposing to modernize the Interagency Communications Center. This is the epicenter of communications on our public lands in Southern Nevada and an absolute key to visitor safety.

In summary, I would like to express my complete support for the four Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
 -Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
 - Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the

Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)

- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use**
This trail is one of the most popular and only accessible trails in Southern Nevada
-Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**
– Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready initiatives will immediately create hundreds of jobs in Nevada as well as bring about 60 million to our local economy. I wish you success in getting these initiatives funded. These projects not only benefit Lake Mead NRA but the entire region. If you have any questions, regarding my support of these projects, please do not hesitate to contact me at oneillalan02@gmail.com.

Sincerely,



Alan O'Neill
National Parks Conservation Association



IN REPLY REFER TO:

United States Department of the Interior

BUREAU OF RECLAMATION
P.O. Box 61470
Boulder City, NV 89006-1470



09/11/2020

Margaret L. Goodro
Superintendent
Lake Mead National Recreation Area
601 Nevada Way
Boulder City, NV 89005

Dear Ms. Goodro,

On behalf of the Bureau of Reclamation, Lower Colorado Basin Regional Office, I would like to express our complete support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead is the 6th most visited park unit in the country and a great benefit to our local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
-Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
- Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use This trail is one of the most popular and only accessible trails in Southern Nevada**
-Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)

INTERIOR REGION 8 • LOWER COLORADO BASIN

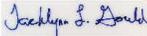
ARIZONA, CALIFORNIA*, NEVADA*

* PARTIAL

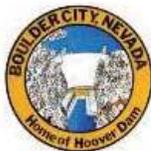
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**
 - Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region. If you have any questions, regarding our support of these projects, please do not hesitate to contact me at jgould@usbr.gov.

Sincerely,

 Digitally signed by
JACKLYNN GOULD
Date: 2020.09.11
06:42:34 -07'00'

Jaci Gould
Deputy Regional Director
Bureau of Reclamation
Lower Colorado Basin Regional Office


CITY OF BOULDER CITY

Mayor and City Council
401 California Avenue
Boulder City, NV 89005
www.bcnv.org

September 11, 2020

Margaret L. Goodro, Superintendent
Lake Mead National Recreation Area
601 Nevada Way
Boulder City, NV 89005

Dear Ms. Goodro,

On behalf of the City of Boulder City, I would like to express my complete support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead is the 6th most visited park unit in the country and a great benefit to our local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
-Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
- Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use This trail is one of the most popular and only accessible trails in Southern Nevada**
-Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**

– Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million dollars to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region. If you have any questions, regarding our support of these projects, please don't hesitate to contact me at kmcmamus@bcnv.org or by telephone at (702) 466-0785.

Cordially,
Kiernan J.
McManus
Kiernan J. McManus
City of Boulder City
Mayor

Digitally signed by Kiernan J. McManus
DN: cn=Kiernan J. McManus, o=City
of Boulder City,
email=kmcmamus@bcnv.org, c=US
Date: 2020.09.11 14:52:44 -0700

Boulder City Chamber of Commerce
465 Nevada Way
Boulder City, NV 89005-2124
(702) 293.2034
www.bouldercitychamber.com

September 4th, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

Dear Ms. Goodro,

On behalf of the Boulder City Chamber of Commerce, I would like to express our complete support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve, and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead is the 6th most visited park unit in the country and a great benefit to our local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
 -Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
 - Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use**
This trail is one of the most popular and only accessible trails in Southern Nevada
 -Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)



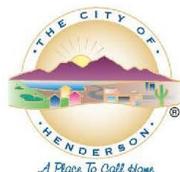
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**
 - Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms, and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region. If you have any questions, regarding our support of these projects, please do not hesitate to contact me at jill@bouldercitychamber.com.

Sincerely,



Jill Rowland-Lagan, CEO



CITY OF HENDERSON
240 Water Street
P.O. Box 95050
Henderson, NV 89009

September 14, 2020

Ms. Margaret L. Goodro, Superintendent
Lake Mead National Recreation Area
601 Nevada Way
Boulder City, NV 89005

Re: SNPLMA Round 18

On behalf of the City of Henderson, I am pleased to express our full support for the Conservation Initiative and Capital Improvement program applications submitted by Lake Mead National Recreation Area (LMNRA) for Round 18 of the Southern Nevada Public Land Management Act (SNPLMA). We are in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors annually who enjoy this outstanding recreation area.

Lake Mead (LMNRA) is the sixth most visited park unit in the nation and provides significant benefit to our local and regional economy. This unique and valued resource plays a central role in the ongoing development of southern Nevada's outdoor recreation and tourism sector, and plays a leading role in providing opportunities for our residents and visitors to experience the beautiful natural areas our region is blessed with.

The four shovel ready projects proposed by LMNRA will immediately create hundreds of jobs in Nevada and are estimated to bring \$60 million into our local economy. SNPLMA projects helped keep our construction sector at work during the great recession, resulting in a significant number of jobs saved, and we value the economic contributions the program is poised again to make during the COVID-19 downturn. We feel completely comfortable supporting the four LMNRA projects described below as they do not compete with our parks, trails and natural areas projects and will serve to enhance the recreational opportunities our region offers.

1. Boulder Recreation Enhancement for Visitor Use and Enjoyment (Capital Improvement): Expands beach, trail, and fishing access to the popular Boulder Area for millions of visitors including disabled Veterans. Modernizes campgrounds by adding electrical, water, and sewer connections. Modernizes the Visitor Center exhibits and installs new and additional restrooms.

2. Modernize Ailing Critical Interagency Communications Center Infrastructure and Systems (Capital Improvement): Provides services for Interagency Conservation Officers, Visitors, and Federal Partners. Protects personnel by equipping NPS and BLM officers with mobile data

SNPLMA Round 18
Page 2

terminals and radios. Updates the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, and Marshals Service.

3. Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use (Conservation Initiative): Restores, stabilizes, and protects the Historic Railroad Trail in LMNRA, one of the most popular and only accessible trails in Southern Nevada. Visitors of all ages and abilities travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead, two critically significant Nevada landmarks. There is no fee charged for use of this trail.

4. Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada (Conservation Initiative): Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adds informational and interpretive signs and restrooms and supplies dumpsters to improve the visitor experience and conserve the backcountry.

The City of Henderson appreciates the opportunity to voice support for these four beneficial projects and wishes LNNRA success in their funding and timely completion. The benefits will go far beyond the borders of LMNRA and add to the quality of life and economic diversity in our region. If you have any questions, regarding our support of these projects, please don't hesitate to contact me at debra.march@cityofhenderson.com.

Sincerely,



Debra March
Mayor



Friends of the Nevada Southern Railway, Inc.

600 Yucca Street, Boulder City, NV. 89005

September 9, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

Dear Ms. Goodro,

On behalf of the Friends of the Nevada Southern Railway board of directors and our more than 1000 members in the greater Las Vegas area, I would like to express our support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve, and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead is the 6th most visited park unit in the country and a great benefit to our local and regional economy.

Our non-profit organization supports the Nevada State Railroad Museum-Boulder City and its programs for the education and benefit of the public and museum with staffing, and operations, maintenance, construction and restoration support. The programs listed below are very compatible with our activities in Boulder City, especially the historic railroad tunnels which are part of the original right-of-way to the dam from our railroad yard in Boulder City. Unfortunately, our railroad does not go to the dam any more, although many of our visitors do ask why! Our railroad uses the original right-of-way and some of the trackage. We have historic rolling stock displays of equipment used for the construction of Boulder (Hoover) Dam. Many of the visitors to LMNRA also visit our railroad museum. In normal years, we have the largest visitation of any of the state museums.

The programs listed below are of specific interest and have our full support:

- Boulder Recreation Enhancement, for Visitor Use and Enjoyment
 - Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)

- Modernize ailing critical Interagency Communications Center Infrastructure and Systems
 - Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use This trail is one of the most popular and only accessible trails in Southern Nevada
 - Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada
 - Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

We understand that these four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about \$60 million to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region.

If you have any questions, regarding our support of these projects, please don't hesitate to contact me at 702-538-8944, asd444@cox.net or at the contacts listed below.

Sincerely,



A Scott Dam
President

president@nevadasouthern.com

702-930-4761

www.NevadaSouthern.com

Friends of the Nevada Southern Railway, Inc. is an IRS 501(c)(3) Nevada Corporation.



September 8, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

Dear Ms. Goodro,

On behalf of Get Outdoors Nevada, I am writing in support of the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement projects submitted by Lake Mead National Recreation Area. We are 100% in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area (the 6th most visited park unit in the country) and an important part of our local and regional economy. These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million to our local economy:

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment: Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area:** Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems:** Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use This trail is one of the most popular and only accessible trails in Southern Nevada:** Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada:** Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

Thank you for the opportunity to voice support of these projects, the benefits of which will reach beyond the park to improve the lives of so many. If you have any questions, please contact me at (702) 997-3350 or mbaca@getoutdoorsnevada.org.

Sincerely,

Executive Director
 Outside Las Vegas Foundation,
 DBA Get Outdoors Nevada



September 8, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

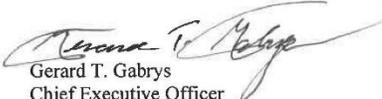
Dear Ms. Goodro,

On behalf of Guest Services, Inc., we would like to express our complete support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead is the 6th most visited park unit in the country and a great benefit to our local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
 Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
 Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use This trail is one of the most popular and only accessible trails in Southern Nevada**
 Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**
 Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region. If you have any questions, regarding our support of these projects, please don't hesitate to contact us.

Sincerely,


 Gerard T. Gabrys
 Chief Executive Officer
 gerry.gabrys@guestservices.com


 Nico J. Foris
 Chief Operating Officer
 nico.foris@guestservices.com

Guest Services, Inc. 3055 Prosperity Ave., Fairfax, Virginia 22031-2290 | T: 703-849-9300 | F: 703-641-4690 | W: GuestServices.com

CULINARY EXCELLENCE | HOTELS & RESORTS | NATIONAL & STATE PARKS | SENIOR LIVING | COMMUNITY MANAGEMENT | RECREATION | RETAIL | FRESH PRODUCE



Lake Mountain Estates Association, Inc.
Phase 1 Homeowners Association
PO Box 60424, Boulder City, Nevada 89006-0424



September 9, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

Dear Ms. Goodro,

On behalf of the Lake Mountain Estates Association (Phase 1 HOA), I would like to express our complete support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead is the 6th most visited park unit in the country and a great benefit to our local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
 Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
 Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use** This trail is one of the most popular and only accessible trails in Southern Nevada. Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**

– Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region.

Our community of 76 homes overlooks Lake Mead and the LMNRA area. We are located community just east of Lake Mountain Drive. Many of our homeowners enjoy the activities at Lake Mead by using their boats and the beach, and the trail and vistas. I know a number of those who own their homes because of the attractions at Lake Mead.

If you have any questions, regarding our support of these projects, please don't hesitate to contact me or any of the other board members as listed below.

Sincerely yours,



A Scott Dam, President
LMEA Board of Directors

2020 Board Contacts:

President: Scott Dam, 702-538-8944, asd444@cox.net

Vice President: Jim Beste, 702-768-6891, bestbetvacations@gmail.com

Treasurer: Chester Williams, 702-336-5331, chesternwilliams@gmail.com

Board Member: Lou Parise, 856-371-5703, louparise@aol.com

Board Secretary: Denise Michaels, 508-277-5614, denisemichaelsemail@yahoo.com



September 7, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

Dear Superintendent Goodro,

On behalf of the National Parks Conservation Association, I would like to express our strong support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We support America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead is the 6th most visited park unit in the country and a great benefit to our local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
 -Expanding beach, trail, and fishing access for millions of visitors including disabled veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
 - Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use**
This trail is one of the most popular and only accessible trails in Southern Nevada
 -Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**
 – Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing its four projects succeed. The benefits will go far beyond the park

and improve the lives of many in this region. If you have any questions regarding our support of these projects, please don't hesitate to contact me at ndesai@npca.org.

Sincerely,

A handwritten signature in cursive script that reads "Neal Desai".

Neal Desai
Senior Program Director, Pacific Region
National Parks Conservation Association

September 4th, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

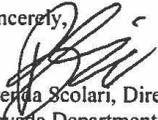
Dear Ms. Goodro,

On behalf of the Nevada Department of Tourism, I would like to express our complete support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead is the 6th most visited park unit in the country and a great benefit to our local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
 -Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
 - Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use**
This trail is one of the most popular and only accessible trails in Southern Nevada
 -Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**
 – Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region. If you have any questions, regarding our support of these projects, please don't hesitate to contact me at bscolari@travelnevada.com.

Sincerely,


 Brenda Scolari, Director
 Nevada Department of Tourism and Cultural Affairs

September 10th, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

Dear Ms. Goodro,

On behalf of the Outdoor Recreation Roundtable, I would like to express our support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead is the 6th most visited park unit in the country and a great benefit to the local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
 Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
 Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use**
This trail is one of the most popular and only accessible trails in Southern Nevada
 Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**
 Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would contribute about \$60 million to the local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region. If you have any questions, regarding our support of these projects, please don't hesitate to contact me at jtuner@recreationroundtable.org.

Sincerely,



Jessica (Wahl) Turner, Executive Director
 Outdoor Recreation Roundtable



September 4th, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

Dear Ms. Goodro,

On behalf of the River Mountain Trail Partnership Advisory Council, I would like to express our complete support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead is the 6th most visited park unit in the country and a great benefit to our local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
 -Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
 - Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)
- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use This trail is one of the most popular and only accessible trails in Southern Nevada**
 -Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**
 – Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region. If you have any questions, regarding our support of these projects, please don't hesitate to contact me at ronfloth@gmail.com.

Sincerely,

Ron Floth, Chairman
 River Mountain Trail Partnership Advisory Council



NEVADA
**STATE HISTORIC
 PRESERVATION OFFICE**

STATE OF NEVADA
 Department of Conservation and Natural Resources

Steve Sisolak, *Governor*
 Bradley Crowell, *Director*
 Rebecca L. Palmer, *Administrator, SHPO*

September 10, 2020

Margaret L. Goodro, Superintendent
 Lake Mead National Recreation Area
 601 Nevada Way
 Boulder City, NV 89005

Dear Ms. Goodro:

On behalf of the Nevada State Historic Preservation Office, I would like to express our support for the Historic Railroad Tunnels Protection, Stabilization, and Restoration conservation initiative proposal submitted by Lake Mead National Recreation Area (NRA) for Round 18 of the Southern Nevada Public Land Management Act.

In multiple public surveys completed for Nevada's 2020-2028 Comprehensive Historic Preservation Plan, the citizens of Nevada expressed their support for responsibly improving access to historic resources while respecting the integrity of Nevada's irreplaceable cultural heritage. Nevada's tourist industry, which brings over 50 million people to Nevada annually for entertainment and outdoor recreation, has created significant challenges for cultural resources located on federally managed lands. This proposal will address this need for responsible recreational opportunities that provide access to cultural resources. However, the proposal will not only provide access to cultural resources but, if carried out consistent with the Secretary of Interior's Standards for Rehabilitation, will also preserve and protect the National Register of Historic Places eligible railroad tunnels built by Six Companies in the early 1930s to support the construction of the Hoover Dam National Historic Landmark.

This shovel ready project will have the added benefit of creating valuable jobs in Nevada and bringing additional revenue to Nevada's economy. We sincerely appreciate your consideration of this proposal, and we wish Lake Mead NRA the best of luck in seeing this project succeed. The benefits will go far beyond the park and improve the lives of many in this region.

If you have any questions concerning this correspondence, please feel free to contact me at (775) 684-3443 or by e-mail at rlpalmer@shpo.nv.gov.

Sincerely,

Rebecca Lynn Palmer
 State Historic Preservation Officer

901 S. Stewart Street, Suite 5004 ✦ Carson City, Nevada 89701 ✦ Phone: 775.684.3448 Fax: 775.684.3442

www.shpo.nv.gov



United States Department of the Interior

BUREAU OF RECLAMATION
P.O. Box 61470
Boulder City, NV 89006-1470



IN REPLY REFER TO:

LCB-1100
1.1.01

September 14, 2020

VIA ELECTRONIC MAIL ONLY

Memorandum

To: Margaret L. Goodro
Superintendent, National Park Service, Lake Mead National Recreation Area

From: Jacklynn Gould
Deputy Regional Director
Board Chair, Southern Nevada Agency Partnership Board

Digitally signed by JACKLYNN
GOULD
Date: 2020.09.14 13:23:05
-07'00'

Subject: Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement Programs

On behalf of the Southern Nevada Agency Partnership Board as the Board Chair, I would like to express complete support for the SNPLMA Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for the millions of visitors who enjoy this recreation area. Lake Mead National Recreational Area is the 6th most visited park unit in the country and a great benefit to our local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
Expanding beach, trail, and fishing access for millions of visitors including disabled veterans to the popular Boulder City area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the visitor center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping National Park Service (NPS) and Bureau of Land Management (BLM) officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves the NPS, Bureau of Reclamation, BLM, US Fish and Wildlife Service, US Forest Service, and Marshals Service. (Capital Improvement)

INTERIOR REGION 8 • LOWER COLORADO BASIN

ARIZONA, CALIFORNIA*, NEVADA*

* PARTIAL

- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use. This trail is one of the most popular and only accessible trails in Southern Nevada**
Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**
Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach Lake Mead while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead National Recreation Area the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region. If you have questions regarding our support of these projects, please don't hesitate to contact me at (702) 293-8409 or jgould@usbr.gov.



September 10, 2020

Margaret L. Goodro, Superintendent
Lake Mead National Recreation Area
601 Nevada Way
Boulder City, NV 89005

Dear Ms. Goodro,

Trail Access Project is a southern Nevada-based 501(c)(3) nonprofit whose mission is to help people with disabilities to enjoy the outdoors, especially in our national parks. On behalf of the Trail Access Project, I would like to express our complete support for the Southern Nevada Public Land Management Act (SNPLMA) Round 18 Conservation Initiative and Capital Improvement programs submitted by Lake Mead National Recreation Area. We are fully in favor of America's first and largest National Recreation Area's efforts to improve and enhance recreation, improve and protect the backcountry, and to provide for recreational services for all visitors who enjoy this area. Lake Mead is the 6th most visited park unit in the country and is a great benefit to our local and regional economy.

- **Boulder Recreation Enhancement, for Visitor Use and Enjoyment**
-Expanding beach, trail, and fishing access for millions of visitors including disabled Veterans to the popular Boulder Area. Modernizing campgrounds by adding electrical, water, and sewer connections. Modernizing the Visitor Center exhibits and installing new and additional restrooms. (Capital Improvement)
- **Modernize ailing critical Interagency Communications Center Infrastructure and Systems**
- Provide services for Interagency Conservation Officers, Visitors, and Federal Partners. Protect personnel by equipping NPS and BLM officers with mobile data terminals and radios. Update the Computer Aided Dispatch for the Interagency Center that serves NPS, BOR, BLM, USFWS, USFS, Marshals Service. (Capital Improvement)

Trail Access Project – 8844 Cortile Drive – Las Vegas, Nevada 89134

(702) 596-7956

accessibletrails@cox.net

A 501 (c)(3) tax-exempt corporation

- **Protection, Stabilization, and Restoration of the Failing Historic Railroad Tunnels for Visitor Use. This trail is one of the most popular and the only universally accessible trail in Southern Nevada**
-Visitors of all ages and abilities can travel through five historic tunnels while connecting with the history of the Hoover Dam and Lake Mead – two critically significant Nevada landmarks. Current temporary visitor protections in the tunnels (shipping containers) detract from the historical significance and add additional access barriers for some. There is no fee charged for use of this trail. (Conservation Initiative)
- **Enhancing Conservation, Maximizing Recreational Experiences, and Strengthening Resource Protection for Millions of Visitors to Nevada**
– Provides critical protection to backcountry areas in Nevada. Expands road access for visitors to reach the lake while restoring unapproved roads. Adding informational and interpretive signs, adding restrooms and supplying dumpsters to improve the visitor experience and conserve the backcountry. (Conservation Initiative)

These four shovel ready projects will immediately create hundreds of jobs in Nevada and would bring about 60 million to our local economy. We are thankful for the opportunity to voice our support of this initiative and wish Lake Mead NRA the best of luck in seeing their four projects succeed. The benefits will go far beyond the park and improve the lives of many in this region. If you have any questions, regarding our support of these projects, please don't hesitate to contact me at Accessibletrails@cox.net.

Sincerely,



Edwin Price
President, Trail Access Project

Trail Access Project – 8844 Cortile Drive – Las Vegas, Nevada 89134

(702) 596-7956

accessibletrails@cox.net

A 501 (c)(3) tax-exempt corporation

SNPLMA Round 18
CI – Bureau of Land Management Addendum

Nomination: Tab 7

Entity: Bureau of Land Management, Southern Nevada District Office

Project: Muddy River Floodplain Restoration

Revision: Overall budget request was reduced from \$3,433,670 to \$3,419,670 due to adjusted labor expenses.

Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

United States Department of the Interior
Bureau of Land Management
Southern Nevada District Office



Muddy River Floodplain Restoration

Amount Requested: \$3,419,670

Congressional District NV-4
Timeframe: 5 Years
Location: 36.698319° / -114.685332°

Project Manager: Jonathan P. Smith
Email address: jpsmith@blm.gov
702-515-5070
702-515-5023 Fax

Purpose Statement:

The Bureau of Land Management, Southern Nevada District Office will restore hydrological integrity to a minimum (35 to 115 acres) of the Muddy River floodplain by removing portions of a deteriorating agriculture levee along the eastern bank of the Muddy River and replacing it with a small engineered berm farther from the river's edge to allow floodwaters to spread out and dissipate energy. The new berm will allow natural floodplain recovery to begin and mitigate flooding to neighboring private land. A new road associated with the berm will also provide a fuel break and access for firefighting and fuels management.

Background info to support the need:

The upper Muddy River is one of the most biologically diverse ecosystems in the Mojave Desert. This short stretch of geothermally warmed stream provides habitat for four threatened and endangered species, two BLM special status species, eight endemic species that exist nowhere else in the world and game species including quail and waterfowl. The project site is an important link in the wildlife migration corridor between the Virgin River and the headwaters complex of warm springs.

The project site is contiguous with large restoration efforts downstream on Moapa Band of Paiute land and upstream on the Warm Springs Natural Area, the Moapa Valley National Wildlife Refuge and Clark County Riparian Conservation Reserve Units. It is used for recreation including hunting, swimming, and wildlife-watching primarily by the Moapa Band of Paiute to the south and the community to the east.

The project site was historically used for agriculture along a one-mile reach of the Muddy River that was part of the Perkins Ranch. An earthen levee on the eastern bank of the Muddy River was constructed to protect pasture and crop land from frequent floods. Over several decades, this structure has caused a cascade of ecological changes to the floodplain. The levee restricted the natural dispersion of floodwaters across the floodplain, and instead, concentrated that erosive energy downward. The stream channel became incised and now lies up to 15 feet deep in portions of the project site. A corresponding drop in the adjacent water table rendered the floodplain less suitable for native riparian trees including cottonwood, willow, and ash, but ideal for invasive tamarisk which colonized the farmland and berm when agriculture ceased. Dense thickets of tamarisk "armored" the banks, impeding stream channel widening—a natural response to downcutting that would create a new, lower floodplain.

In 2014 work crews cleared over 50 acres of tamarisk and planted nearly 10,000 willow, cottonwood, and ash saplings along narrow floodplain remnants. That year, the Muddy River breached the levee in two places and flooded adjacent private property. Some neighboring landowners, who have constructed homes within the 100-year flood zone, cast blame on the BLM for not maintaining the levee as it had been when the area was managed for agriculture. Over the past several years, the BLM, Clark County Regional Flood Control, the U.S. Geological Survey, and the Natural Resources Conservation Service have appraised the situation and agree that the levee, in its current location and condition, is not a sustainable flood control structure.

Relationship to prior approved phases or related SNPLA projects and description of anticipated phases:

BLM began vegetation treatments to reduce the invasive-dominated vegetation in 2014. Most of the project area is now dominated by native plants which will make recovery from the disturbance of relocating the berm much easier to manage. Native quailbush and mesquite inhabit areas formerly overgrown with tamarisk. Based on our experience with this site, the native species will quickly establish disturbed areas and compete aggressively with invasive species, but extra precaution will be needed in areas where Russian thistle, knapweed, and other invasive plants persist.

Slash pile burning was completed in 2019, reducing fuel loads and allowing better access to most of the site for the proposed berm relocation/modification. However, large tamarisk trees remain on the far southern end of the berm and in patches throughout the southern end of the project area. These will need to be targeted in the mastication and herbicide treatments proposed for this project.

Future work will be predicated on the outcomes of the levee removal, berm construction and restoration, the results of the stream channel study and stochastic variables as follows:

- Rate of change due to flood events. A particularly severe event could create a need to do rapid revegetation, or more likely, additional weed treatments for one or two seasons as native plants recover.
- The stream channel study in this project will identify potential grade control structures, re-contouring, or other options that could be used to modify the steam channel and/or adjacent riparian areas to make them more suitable for native vegetation.
- That study will assess the potential effects of stream channel modification on water quantity and the impact, if any, on water rights holders.
-

An increase in native willows and cottonwoods from previous restoration is attracting beavers who have attempted dams at several locations. Successful beaver dams would significantly alter the floodplain environment and create a need or opportunity for future restoration actions

Deliverables:

- Primary deliverables
 - Hydrological and geomorphological studies to inform engineering.
 - Engineering plans for levee removal and berm construction that comply with state and federal regulations.
 - Removal of the old agriculture levee along the streambank (approximately 2,000 feet in length and consisting of at least 50,000 cubic yards of material). The actual portions of levee removed will be contingent upon the results of hydrological modeling, engineering design considerations, the ability to use old levee material in the new berm, public input, and cost.
 - Construction of a new berm approximately 2,000 feet in length. Dimensions are contingent upon the same considerations as the levee removal. Ideally, material from the old levee and/or an adjacent Clark County floodplain restoration project

will be used for the berm. Riprap or gravel may be needed to meet design specifications.

- Construction of approximately 2,500 feet of road alongside or atop the new berm contingent upon design specifications.
- Restoration of the areas disturbed by the levee removal and new berm construction.
 - Restoration includes collection of native seed and vegetative cuttings, greenhouse propagation, deep-pot planting, seeding, and invasive species management. Experience with this site suggests a strong likelihood of natural colonization by native shrubs can be expected.
 - Intensive restoration on approximately 15 acres newly disturbed by construction, and at least 35 acres of tamarisk and other weed treatments and restoration.
 - The entire 115 acres of potentially restored floodplain will be monitored and treated for invasive species during the District's annual weed inventory.
- Anticipated deliverables
 - Stream channel design study outlining options for control structures, excavation and other channel or floodplain modifications to accelerate floodplain recovery and their effects on water output.
 - FEMA accreditation of the new berm and re-mapping of the area behind the berm as a moderate-hazard zone in accordance with section 65.10 of the National Flood Insurance Program.
 - A memorandum of understanding with BLM and relevant water rights holders for future stream channel or floodplain actions that might affect downstream water output.
- Standard deliverables
 - Biological and cultural surveys.
 - Boundary/cadastral survey if necessary.
 - Construction work plan.
 - Restoration plan
 - including mastication, weed control, and re-vegetation methods.
 - A five-year weed monitoring plan.
 - U.S. Fish and Wildlife Service consultation.
 - Signed Decision Record from NEPA analysis including incorporation of the Clark County Regional Flood Control project-specific procedures from the 2004 Flood Control Master Plan SEIS.
 - U.S. Army Corps of Engineers permit for berm construction.
 - Construction permits.

Project Timeframe:

This project will take 5 years to complete.

Year 1:

- Develop a work plan.
- Review USGS inundation study report and prepare scopes of work for follow-on geomorphology, soils, and hydrological modeling studies in collaboration with SNDO, NSO and NOC engineering and hydrology programs.
- Develop a consulting and permitting timeline with collaborators: Clark County, Moapa Paiute Tribe, Southern Nevada Water Authority, Community of Moapa, Clark County Flood Control District, Nevada Department of Wildlife, U.S. Fish and Wildlife, Federal Emergency Management Agency.
- Prepare scopes of work (Construction COR) for architectural and engineering contract(s) with BLM Nevada State Office and National Operations Center support.
- Prepare and execute environmental planning contract(s) for biological and archaeological surveys and NEPA planning (including environmental assessment preparation, public workshops and environmental compliance permitting).
- Begin resource surveys, environmental planning.

Year 2:

- Execute assistance agreement with one or more non-governmental organizations for utilization of volunteers, conservation crews and restoration technicians.
- Complete biological and cultural surveys.
- Complete preliminary engineering drawings, specifications, and cost estimates (Title I design services) for the levee removal and berm and associated infrastructure construction.
- Solicit input on draft architectural drawings and alternatives from collaborators.
- Present alternatives at community and Tribal meetings and incorporate input.
- Complete project design alternatives and prepare the draft environmental assessment.
- Initiate ESA and Tribal consultation.
- Conduct mastication and herbicide treatments for vegetation.

Year 3:

- Select final alternative, sign decision record, complete NEPA contract.
- Submit, review, and inspect engineering specifications and drawings (Title II design services).
- Secure approval from Clark County Regional Flood Control District, Nevada Division of Water Resources and FEMA.
- Select construction contractor(s).
- Conduct salvage and seed collection for restoration of disturbed sites.
- Continue outreach presentations in the community.
- Begin construction.

Year 4

- Complete construction.
- Begin restoration of disturbed habitat using NGO/volunteer crews.
- Begin monitoring

Year 5

- Continue monitoring, weed control, additional restoration planting/seeding, if needed.
- Finalize as-built report and drawings and Title III Construction Services.
- Project closeout.

Level of Readiness for Implementation:

The U.S. Geological Survey has been retained under an interagency agreement to conduct detailed ground-based LIDAR for a topographic analysis, an inundation study and 2D hydrological modelling. That report is due December 2020 and will provide the basis for subsequent soils, geomorphology and hydrology studies and engineering design work necessary for this project. Clark County Regional Flood Control has commented on this proposal and has agreed to provide further input if funding is secured.

Authority for tamarisk treatments is in place. A review and determination of NEPA adequacy of the existing environmental analysis will be used to ensure the restoration prescription and techniques used in this project are still authorized.

Adjacent property owners in the community and the Moapa Band of Paiutes have been involved in the early discussions of the overall stream restoration program. We have discussed the project with agency partners and the broader community through the Virgin River Coalition.

Future Operations and Maintenance:

The Bureau of Land Management, Southern Nevada District is responsible for all maintenance related costs after construction.

Partnerships and/or contributed funds:

The SNDO will work with partners and NGOs to implement the project. The BLM estimates that NGOs will provide approximately \$55,946 in in-kind labor and the BLM will commit \$73,925 in other appropriated funding for the project for a total of \$129,871.

- Volunteer labor – Restoration crews would consist of volunteers. Estimated value would be 5 volunteers per crew, each contributing 40 hours per crew week for approximately 10 weeks over the term of the project, for a total of 2,000 hours, at \$25.43 per hour, total estimated value \$50,860.
- Volunteer labor – At least four tree-planting events with an emphasis on community-based Tribal youth recruitment. Estimated value of in-kind contribution is \$5,086.
- NEPA Planning – The Las Vegas Field Office will contribute labor to complete NEPA processing at an estimated cost of \$73,925

Funding Summary:

ROUND 18			
CONSERVATION INITIATIVES NOMINATION			
ESTIMATED DIRECT COSTS & KEY MILESTONES			
Project Name:	Muddy River Floodplain Restoration	Date prepared:	8/21/2020
Project #		Agency:	BLM
Prepared by:	Jonathan Smith	Priority #:	
Title/position:	Natural Resource Specialist/Project Manager	Phone #:	702/515-5070
1 Planning & Environmental Documentation		\$6,900	0.20%
Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)			
2 FWS Consultation - Endangered Species Act		\$19,200	0.56%
Direct expenses or FWS consultation, if required.			
3 Direct Federal Labor to Implement Project (Payroll)		\$703,200	20.56%
For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.			
4 Project Equipment and/or Supplies and Materials		\$41,600	1.22%
Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.			
5 Travel and Per Diem for Implementation		\$10,500	0.31%
Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below			
6 Official Vehicle Use (vehicles with Federal license only)		\$11,220	0.33%
Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost			
7 Training (required to implement the project)		\$7,500	0.22%
Includes training essential/necessary for implementation of the project.			
8 Contracts, Grants, and/or Agreements		\$2,392,000	69.95%
CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan.			
9 Other Necessary Expenses		\$227,550	6.65%
(See Appendix B-11)			
Total requested/estimated budget		\$3,419,670	100.00%
10 Estimated agency or partner contribution		\$129,871	
Total Estimated project value		\$3,549,541	

Performance Measures:

- Goal 1: Sustain the quality of the outdoor environment by conserving, preserving, and restoring natural and cultural resources.
 - Outcome: Increased quality of natural resources and protection of their ecological integrity and sustainability.
 - Output: Relocate or modify the berm to begin restoration of the natural floodplain function, integrity and stability.
 - Performance Measure #H6 – 50 acres of wetland/riparian habitat treated, enhanced, or restored.

- Goal 2: Improve the quality of life for all publics in urban and rural communities by enhancing recreational opportunities that connect people with the outdoor environment.
 - Outcome: Enhanced recreational opportunities through improved access to the stream, increased wildlife-related restoration (birdwatching, hunting), lower flood and fire risks.
 - Output: Relocate/modify berm. New main access route on new berm.
 - Performance Measure #H2 – 1 mile of riparian stream enhanced or restored.
 - Outcome: Promote education – Provide opportunities to improve the public’s connection with natural, cultural, and recreational resources and weed prevention and awareness through education.
 - Output: Provide information to the community and interact with them through updates on the project’s purpose, benefit, methods, and progress.
 - Performance Measure #O5 – 12 outreach contacts made throughout project planning and implementation. Three town board/community presentations.
 - Output: Engage volunteers in project implementation, providing education and training in conservation principles and restoration practices.
 - Performance Measure #O10 – At least 20 volunteers used for project restoration.
 - Output: Provide education and training to volunteer crews in conservation principles and restoration practice
 - Performance Measure #O7 – At least 2 interpretive or educational presentations given to volunteer groups.

Executive Committee Strategic Plan Values:

A. Sustainability:

- a. By removing the old levee, the project will restore the natural flood regime, which will, in turn, allow the entrenched stream channel to evolve through widening, meandering, and new channel alignments. Native vegetation communities (re-established over the past six years) will capitalize on these changes, creating habitat conditions more suitable for wildlife, including federally listed bird species.

These ecological processes could be assisted or accelerated with stream channel re-engineering in the future, if practicable – studies needed for our current project will clarify options for future management actions. Regardless, once the levee is removed and natural flooding restored, the project site will be on a more sustainable, resilient ecological trajectory with or without future projects.

Construction of a new berm several hundred feet from the stream will provide more reliable flood protection for the local community. Modern best management practices for flood control in natural systems call for levees to be located away from streambanks so that floodplains can function properly (Figure 4).

Floodplains allow water to spread out, dissipating energy, lowering erosion potential and the height of floodwaters. The berm will be designed to mitigate routine floods within the Perkins Ranch portion of the floodplain and to withstand being overtopped by larger (e.g. 100-year floods), less frequent floods. The berm will mitigate, but not protect development in the flood zone—a point that we will make abundantly clear through public outreach.

B. Connectivity.

- a. The project will address these negative ecological and social effects simultaneously. In so doing, it supports the sustainability, community, and connectivity values of the SNPLMA Executive Committee.

Non-locals, including photographers and birdwatchers, are becoming increasingly aware of the upper Muddy River system. Upstream of the project site, restoration is being undertaken by the Clark County Desert Conservation Program, the Southern Nevada Water Authority Warm Springs Natural Area and the Moapa Valley National Wildlife Refuge. Downstream, the Moapa Band of Paiutes have removed tamarisk and restored native trees to a portion of the stream. This project will increase the connectivity of suitable wildlife habitat patches, helping to restore a critical migration corridor for wildlife, including the endangered southwestern willow flycatcher and the threatened western yellow-billed cuckoo. The increased connectivity of habitat creates options for future human visitors as well, including the possibility of an interpretive trail connecting upstream areas restored by other organizations.

C. Community.

- a. Local communities and other visitors will benefit from the creation of a new two-track or ATV route alongside the new berm. This new path, close to the private property boundary will create a fuel break and better access for weed control, fuels reduction, and firefighting. BLM restoration crews will continue annual maintenance to trim encroaching vegetation.

Residents, including the Moapa Band of Paiutes have a connection with the Muddy River floodplain for hunting, hiking, swimming, ATV riding, wildlife watching and other traditional or cultural activities. The new route along the berm will enhance access for these purposes. Quail, waterfowl, and other game species

will benefit from a shift toward native vegetation, improving hunting and wildlife watching conditions.

The Moapa Band of Paiute's environmental coordinator has expressed interest in restoring traditional cultural uses of the Perkins Ranch. For example, the Tribe is attempting to reinvigorate basketry using native willows traditionally gathered within the project area. The inclusion of a part-time tribal liaison in this proposal will ensure open communication with the Moapa leadership on the appropriate selection of restoration techniques and plant species, incorporation of traditional ecological knowledge into the project and the creation of sustainable access to traditional resources and uses. A NGO conservation partner will be enlisted to recruit tribal youth and other local community members for volunteer tree-planting events to strengthen the sense of ownership and stewardship

Compliance with Departmental Priorities, Strategic Goal, Executive Orders (EO), or Secretarial Orders (SO):

- **Executive order #13855: *Promoting Active Management of America's Forests, Range Lands to improve conditions and reduce wildfire risk.***
 - The new two-track road at the berm, immediately adjacent to the community, will create a fuel break that provides better access for firefighting and controlling flammable weeds. Tamarisk trees are extremely flammable. Each one of these replaced by a native riparian plant reduces wildfire risk. We will collaborate with State, Tribal, and local partners to optimize the wildfire risk reduction during project planning.
- **DOI Priority #1: *Create a conservation stewardship legacy second only to Teddy Roosevelt.***
 - The upper Muddy River is one of the most biologically diverse river systems in the western United States and it is, or in some cases, was home to rare wildlife species. This project is an important step toward conserving the remaining species and restoring habitat for species that have been locally extirpated since the original riparian forests were removed. Our upstream neighbors have successfully restored areas of riparian habitat, which has attracted three nesting pairs of endangered southwestern willow flycatcher. The new habitat we create will provide forage for those migrating birds, and eventually nesting habitat for others.

The project will also help BLM address the Departmental priority to Restore Trust and Be a Good Neighbor. The failure of the levee during BLM's tenure of the land has negatively affected neighboring properties. This project will achieve a conservation objective while also mitigating flooding and wildfire risk for the neighboring community. The Perkins Ranch is in an area of Clark County where anti-federal government sentiments run strong. Some neighbors are supportive of the project, while others are skeptical that BLM would take any actions in their interest. This project is an opportunity to demonstrate that areas managed for conservation can benefit the local community.

- **DOI Priority #2: Sustainably develop our natural resources.**
 - NA
- **SO No. 3347: Conservation Stewardship and Outdoor Recreation**
 - Restoring a functioning floodplain will be a critical step toward conserving the valuable and unique wildlife resources of the upper Muddy River for current and future generations to enjoy. Hunting and wildlife-watching opportunities will be enhanced with the addition of a two-track road for access and by improving wildlife habitat along the river. Quail, waterfowl, and non-game bird species will benefit from this project.
- **SO No. 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes and Territories**
 - The project area is used for hunting and outdoor recreation by visitors and the local community, including Tribal members. We will hold public meetings and workshops to discuss the project and ways to enhance access for these activities. One of the primary reasons we are including a tribal liaison position in the project is to develop a better understanding of how this project and future actions encourage younger members of the Moapa Band of Paiutes to get outdoors and engage in nature and traditional practices.
- **SO No. 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors**
 - NA
- **SO 3366: Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior**
 - Waters Managed by the U.S. Department of the Interior. The project site will remain open for recreational pursuits. Access is difficult due rough roads and private land, but it is rewarding for those who make the effort. The additional road and possible trails created by mastication of the remaining tamarisk will enhance access to some degree.
- **SO 3370 Improving Conservation Stewardship and Increasing Public Access to Urban National Wildlife Refuges**
 - NA
- **SO 3372 Reducing Wildfire Risks on Department of the Interior Land Through Active Management**
 - Weed abatement and the two-track road along the new berm will provide a fuel break to reduce wildfire risk to the neighboring community. The removal of the old levee and transition from invasive to native plant communities will reduce fuels and increase resistance and resilience
- **SO 3374 Implementation of the John D. Dingell, Jr. Conservation, Management and Recreation Act**
 - NA
- **SO 3376 Increasing Recreational Opportunities through the use of Electric Bikes**
 - NA

Ranking Criteria:

- **Criteria #1:** *The nomination supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability*
 - a. Habitat Enhancement
 - The project will enhance riparian habitat that serves as a migratory corridor for southwestern willow flycatcher, yellow-billed cuckoo and other bird and mammal species including beaver. The project area connects with Clark County Desert Conservation lands and the Warm Springs Natural Area and to the north, which connects with the Moapa Valley National Wildlife Refuge. To the south, it connects with restored areas of Moapa Band of Paiute land.
 - The project will enhance habitat for southwestern willow flycatcher and western yellow-billed cuckoo.
 - The project will create additional habitat and more sustainable ecological conditions for several BLM special status species including the Moapa Speckled Dace and Virgin River Chub (Muddy River population), eight endemic invertebrates and fish that live nowhere else in the world and other species of conservation concern including the Blue Grosbeak, Summer Tanager and Vermilion Flycatcher.
 - The project includes funding for control of tamarisk and secondary weed invaders
 - The habitat being restored is important for several migratory bird species and fish species on the BLM sensitive species list.
 - The project is consistent with a climate change mitigation action in at least two ways: removing the old levee allows the floodplain to accommodate an increase in flooding from more energetic storm events.
 - Two monitoring wells (piezometers) will be installed in areas where the berm is removed to inform species selection for revegetation and to bolster long-term monitoring.
 - The most significant restoration of this portion of the Muddy River undertaken.
 - The project will restore natural conditions in this section of the stream reach, raising the possibility of reintroduction of Relict Leopard Frog.
 - b. Cultural Resources
 - Prominent cultural features will be recorded during site surveys.
 - Tribal involvement and consultation will occur as part of restoration planning and implementation.
 - c. Public Health and Safety
 - Restoration in Progress signs will be installed during that phase of the project.
 - Restoration monitoring will record any new disturbances or illegal activities.
- **Criteria #2.** *The nomination promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support*

- a. The Muddy River ecosystem has been highly degraded by development, agriculture and other land uses, groundwater pumping, introduction of invasive species. Combined with upstream projects, the project will bring a level of resiliency back to this ecosystem that has been missing for decades, ensuring resources are conserved for future generations.
 - b. The project uses well-established modern best management practices for relocating levees to restore hydrologic function to floodplains. Native vegetation helps restore integrity to stream channels that have been armored by tamarisk and incised.
 - c. Removal of the levee will allow natural recovery of this ecosystem to continue for decades.
- **Criteria #3.** *The nomination promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites*
 - a. Throughout the project BLM and Tribal outreach efforts will reach out to engage the public to becoming stewards of the land.
 - b. The BLM will conduct cultural survey and monitor construction.
- **Criteria #4.** *The nomination promotes sustainability, connectivity, and community by connecting people to nature and recreational opportunities by uniting communities with important places across the landscape. The nomination enhances partnerships t promote cooperation and collaboration.*
 - a. The project aligns with Clark County’s Multiple Species Habitat Conservation Plan, the Nevada Department of Wildlife’s conservation goals, the U.S. Fish and Wildlife Service’s endangered species Recovery Implementation Plan, and the Clark County Flood Control Office flood mitigation strategy.
 - b. The project design will include a broad spectrum of non-federal collaborators to ensure the best possible outcome for all stakeholders.
 - c. Stewardship of the site will remain primarily federal and state throughout the duration of the project and beyond.
- **Criteria #5.** *The nomination has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project*
 - a. Two sources of non-SNPLMA, in-kind funding are included in the nomination.
- **Criteria #6** *Advances the Agency/Entity Priorities. The proposed project specifically identifies what and how the nomination/project meets the priorities and strategic goals for their respective agency.*
 - a. Yes
- **Criteria #7.** *Consistency with Executive (EO) and Secretarial Orders (SO). The proposed project specifically identifies what and how the nomination/project meets the EO and/or SOs.*
 - a. Yes. See above.

Maps:

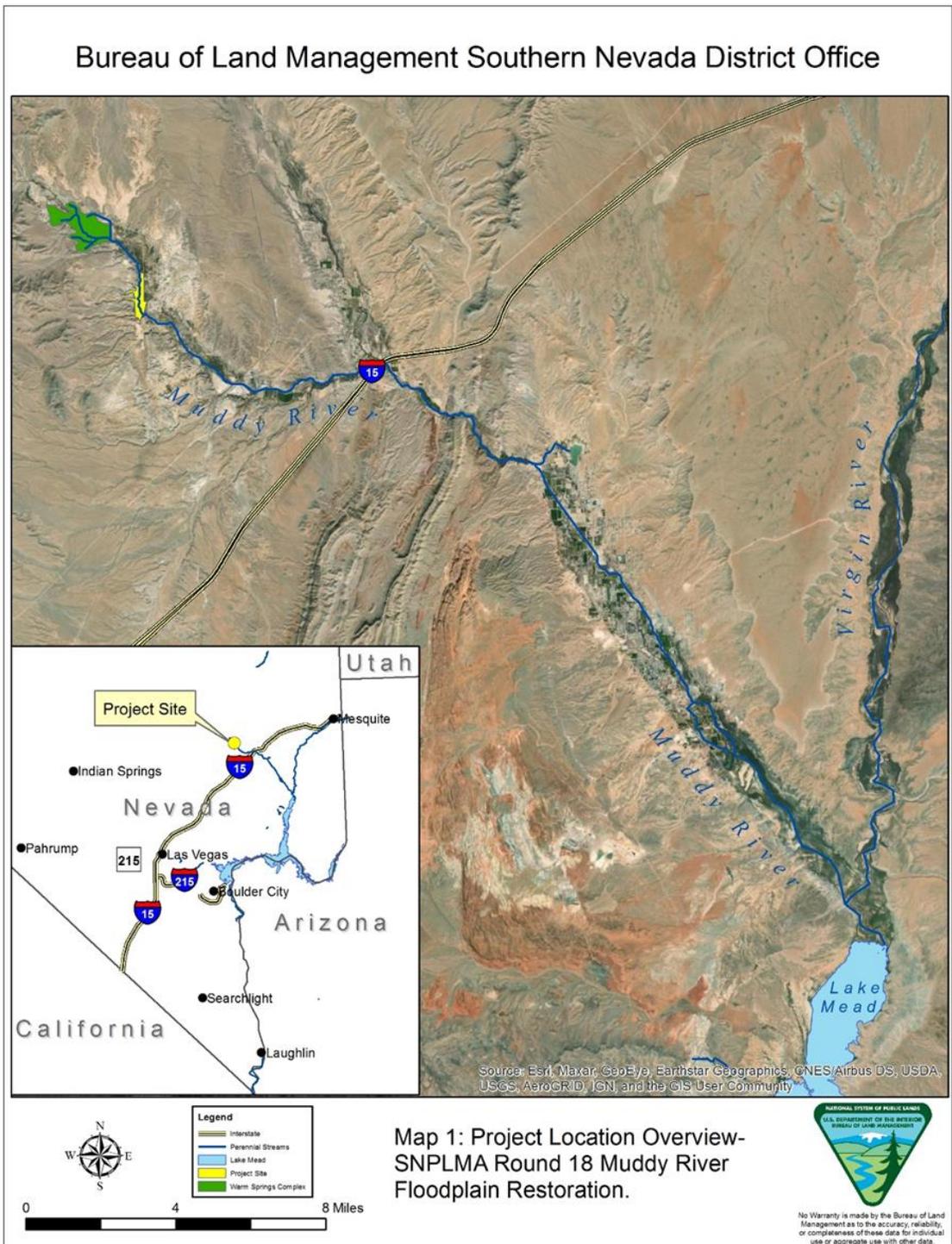


Figure 1, Project 1 Location, Clark County Nevada, approximately 50 miles north of Las Vegas.

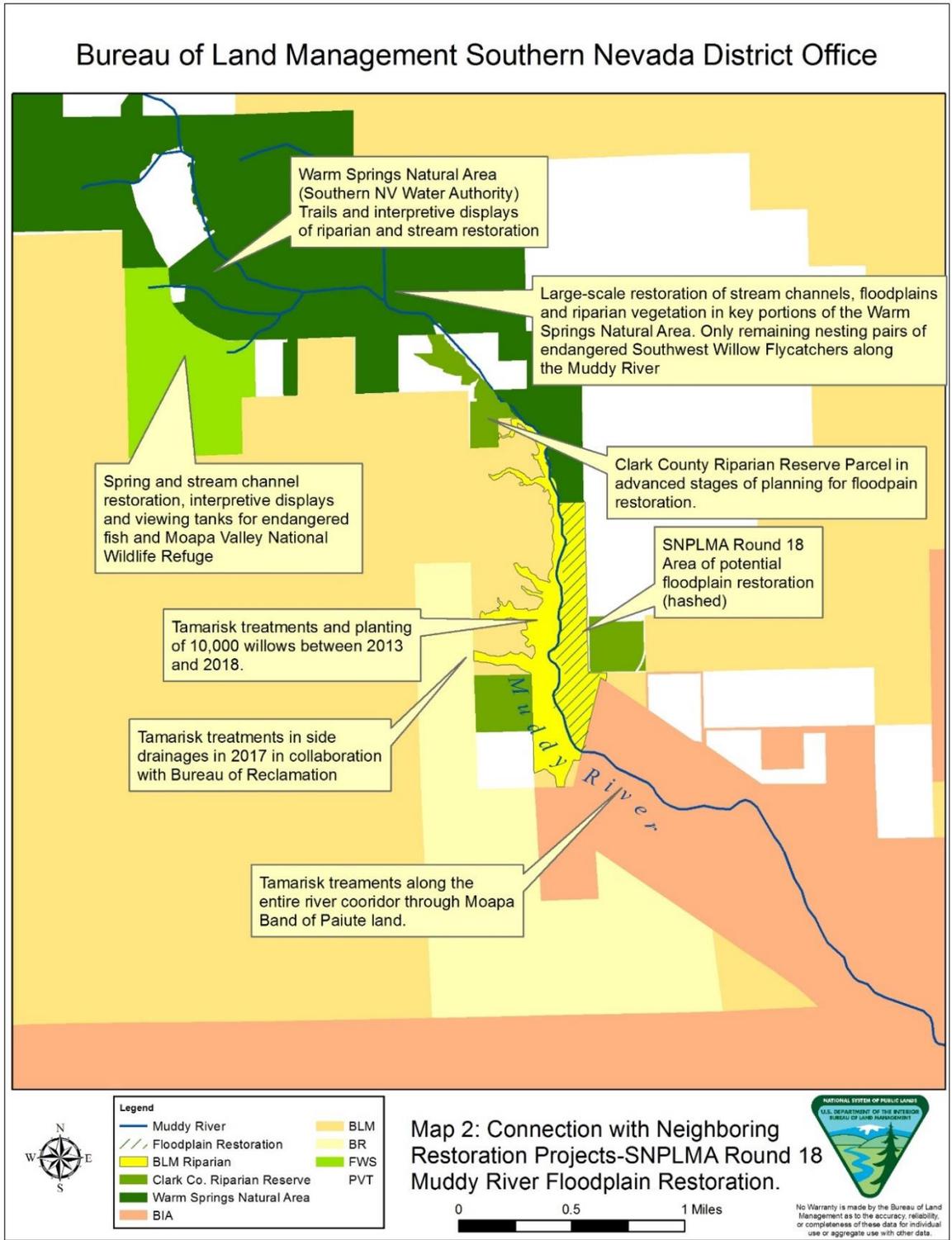


Figure 2 Project area and relationship to other projects and other ownerships.

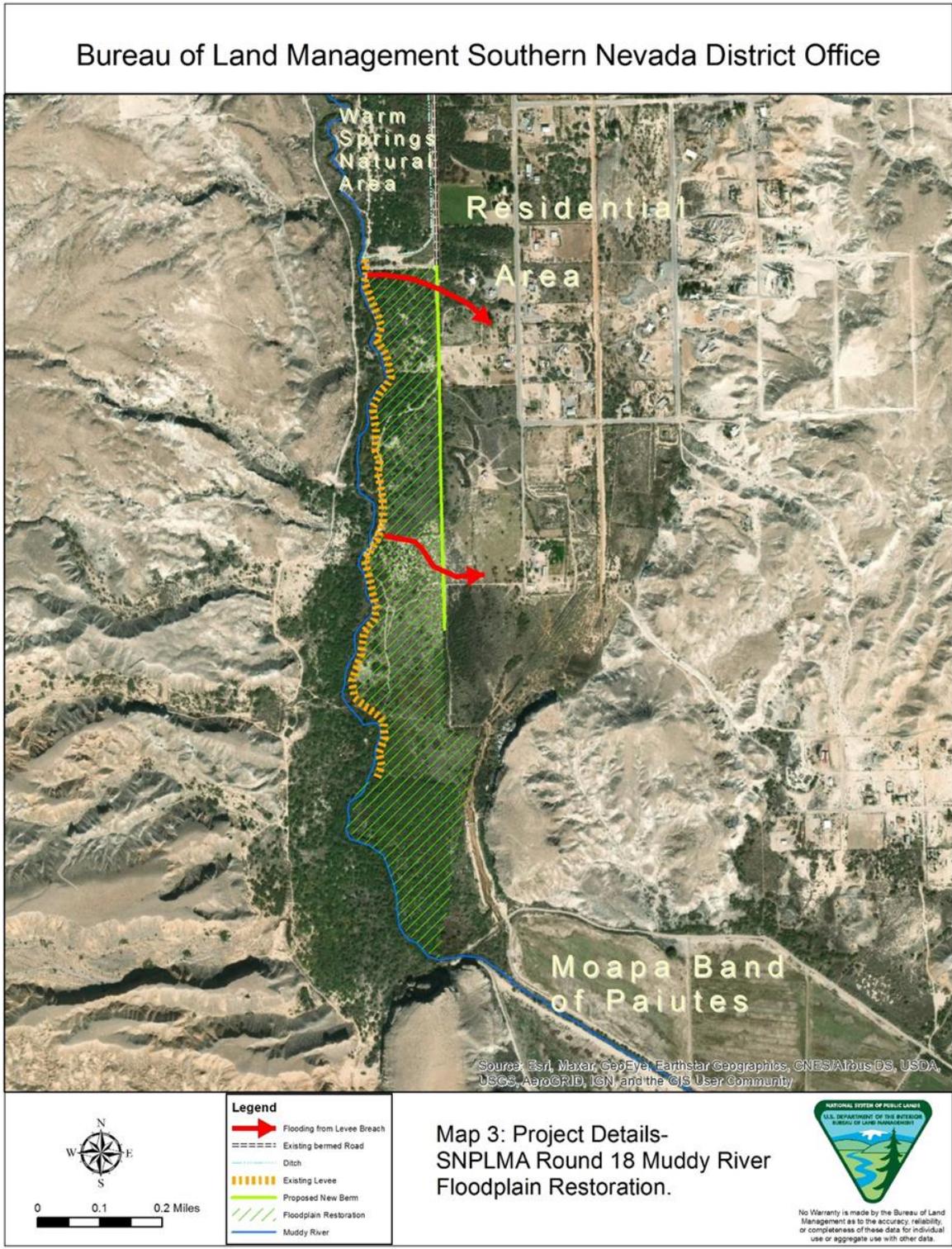


Figure 3 Project area, aerial photo.

Photos:

Figure 4 Old agricultural levee



Figure 5 Levee with large tamarisk stumps from prior removal

Letters of Support:

1. Clark County Desert Conservation Program (2 pp)
2. Moapa Band of Paiutes (1 p)
3. Southern Nevada Water Authority (1 p)
4. U.S. Fish and Wildlife Service (1 p)



September 3, 2020

Robert Taylor
 Conservation Initiatives Program Manager
 Bureau of Land Management
 4701 North Torrey Pines Drive
 Las Vegas, Nevada 89130

RE: Letter of Support for the Bureau of Land Management's Round 18 Nomination to Restore the Floodplain along the Muddy River

Dear Mr. Taylor,

I am pleased to provide this letter to express our support for the Bureau of Land Management's (BLM) Round 18 nomination of the Muddy River Floodplain Restoration project under the Conservation Initiatives category of the Southern Nevada Public Land Management Act (SNPLMA).

The Muddy River, located in southern Nevada, is a very rare riparian ecosystem that provides an oasis for species amidst an otherwise harsh desert environment. Native trees along the Muddy River provide important nesting habitat for birds including the federally endangered southwestern willow flycatcher and threatened yellow-billed cuckoo, while providing shade and mitigating water temperatures for native stream and river species. However, these important habitat areas along the Muddy River have been significantly reduced over the last century due to development, agriculture, fire, and the lowering of the regional aquifer, which have all resulted in significant channelization of the river and alteration of the local floodplain. The region is now susceptible to intermittent flooding and scouring of the landscape that further endangers species habitat and can cause damage to local private properties during high-flow events. This alteration of habitat has impacted many bird and fish species native to the region.

BLM, Clark County, and the Southern Nevada Water Authority (SNWA) all administer lands along the Muddy River and have made significant contributions towards restoring and enhancing habitat along the river for the benefit of native bird and fish species. Clark County is currently designing a substantial floodplain and habitat restoration project just upstream of the BLM's proposed project location and the SNWA is planning similar efforts on lands they manage in the region. BLM's proposed Muddy River Floodplain Restoration project would complement ongoing work conducted by Clark County and SNWA and would expand prior restoration projects implemented by BLM.

These agencies have a strong history of working together to collaboratively restore the floodplain and enhance species habitat along the Muddy River to benefit the rare species that rely on this unique desert riparian area and BLM's proposed restoration work would expand on and further enhance these efforts. We

BUILD:MAX SHRED:MAX EXPLORE:MAX LEARN:MAX

STREAMLINING DEVELOPMENT • PROTECTING SPECIES • PRESERVING OUR FUTURE

4701 W Russell Road, Suite 200, Las Vegas, NV 89118 • Phone 702.455.3536 • FAX 702.382.4593

strongly urge the SNPLMA Partners Working Group and the Executive Committee to move this project forward for funding. Please feel free to contact me at 702-455-5529 should you have any questions or need additional information.

Sincerely,

A handwritten signature in blue ink that reads "Kimberley Jenkins". The signature is fluid and cursive, with the first name being more prominent.

Kimberley Jenkins
Principal Environmental Specialist
Clark County Desert Conservation Program



MOAPA BAND OF PAIUTES

Moapa River Indian Reservation
P.O. Box 340
Moapa, NV 89025
Telephone: (702) 865-2787
Fax: (702) 865-2875

September 11, 2020

Robert Wandel
Assistant District Manager - SNPLMA Division
Bureau of Land Management
4701 N. Torrey Pines Dr. Las Vegas, NV 89031

RE: Muddy River Floodplain Restoration

Mr. Wandel,

The Moapa Band of Paiutes is pleased to support the subject Conservation Initiative that is proposed for SNPLMA-18 funding. The Tribe anticipates working closely with those involved to ensure that our culture, lands, and natural resources are preserved in the process.

We appreciate the need for a complete assessment of the levee and its impact on the floodplain. It is important that we learn to understand and work with The Earth to achieve what is in the best interest of our land and our people.

The Moapa Band of Paiutes feels that this is a good start to achieving this goal.

Sincerely,


Chairwoman Laura Parry



August 26, 2020

Robert Wandel
 Assistant District Manager – SNPLMA Division
 Bureau of Land Management
 4701 N. Torrey Pines Dr.
 Las Vegas, NV 89031

RE: BUREAU OF LAND MANAGEMENT'S PROPOSED SNPLMA ROUND 18 PROJECT
 "MUDDY RIVER FLOODPLAIN RESTORATION."

Dear Sir:

I am writing this letter in support of The Bureau of Land Management's (BLM) proposed SNPLMA Round 18 project "Muddy River Floodplain Restoration." The Southern Nevada Water Authority (SNWA) owns and operates the 1220-acre Warm Springs Natural Area (WSNA) that is adjacent to and north of the BLM property proposed for restoration. The SNWA has worked with the BLM for more than 11 years on a variety of ecological restoration and conservation projects in the upper Moapa Valley. Staff from our two agencies meet regularly with other members of the Biological Advisory Committee (BAC), a technical subcommittee of the Muddy River Recovery Implementation Program (RIP). The SNWA has always appreciated the strong relationship that it has established with the BLM. This relationship has been built through the consistent professionalism, expertise, and excellence that BLM has modeled over the years. The SNWA supports the goals and objectives of this project. We look forward to following the progress of this project and hope to learn techniques and processes that we can apply to our own ecological restoration on the WSNA.

Sincerely,

Keiba K. Crear, Manager
 Stewardship and Sustainability Division
 Southern Nevada Water Authority

KK:VW

RECEIVED BLM
 SOUTHERN NEVADA
 DISTRICT OFFICE
 2020 AUG 31 A 10: 28

SNWA MEMBER AGENCIES

Big Bend Water District • Boulder City • Clark County Water Reclamation District • City of Henderson • City of Las Vegas • City of North Las Vegas • Las Vegas Valley Water District



United States Department of the Interior



FISH & WILDLIFE SERVICE
 Moapa Valley National Wildlife Refuge
 4225 West Warm Springs Road
 Moapa, Nevada 89025
 Phone: (775) 725-3417 ~ Fax: (702) 515-5460

Date: 8/31/2020

Robert Wandel
 Assistant District Manager - SNPLMA Division
 Bureau of Land Management
 4701 N. Torrey Pines Dr.
 Las Vegas, NV 89031

Mr. Wandel-

I am writing a letter of support for Bureau of Land Management's (BLM) proposed Muddy River Floodplain Restoration project. The floodplain restoration project will complement the ongoing efforts by multiple federal, state, local, and tribal agencies to protect and restore the biologically diverse Muddy River ecosystem.

The Moapa Valley National Wildlife Refuge (MVNRW) is part of the National Wildlife Refuge System, which is the only system of federal lands dedicated to wildlife conservation. The MVNRW was the first National Wildlife Refuge established for an endangered fish. The purpose of the refuge is to provide and protect habitat for the endangered Moapa dace.

The BLM's current and past partnerships with the USFWS have greatly enhanced the recovery efforts of the Moapa dace and other native species that occur in the Muddy River ecosystem. Floodplain restoration is a critical component of the overall restoration plan for the area. Not only will this project improve the floodplain recovery, it will also benefit a host of game and non-game wildlife species. Additionally, private landowners will benefit from flood mitigation that the project will provide.

The USFWS fully supports the Muddy River Floodplain Restoration SNPLMA Round 18 proposal. If you have any questions or concerns, please contact us to discuss.

Sincerely,

David Stone
 Wildlife Refuge Specialist, USFWS
 Moapa Valley NWR

SNPLMA Round 18
CI – U.S. Fish and Wildlife Service Addendum

Nomination: Tab 8

Entity: Desert National Wildlife Refuge Complex, Pahrangat National Wildlife Refuge

Project: Native Fish Refugium

Revision: Overall budget request was reduced from \$528,815 to \$528,627 due to the inflation rate for federal personnel labor under planning was adjusted from 15% to 0%.

Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

United States Department of the Interior
U.S. Fish and Wildlife Service
Desert National Wildlife Refuge Complex
Pahrnagat National Wildlife Refuge



Native Fishes Refugium

Amount Requested: \$528,627

Congressional District NV-4
Timeframe: 5 Years
Location: 37.24388889° / -115.1141667°

Project Manager: Rob Vinson
james_vinson@fws.gov
Pahrnagat National Wildlife Refuge

Purpose Statement:

The U.S. Fish and Wildlife Service's (USFWS) Southern Nevada Fish and Wildlife Office and Pahranaagat National Wildlife Refuge (NWR) will enhance habitat and establish a refugium for the critically endangered Pahranaagat roundtail chub (*Gila robusta jordani*) at Cottonwood Spring, within the Pahranaagat NWR, Lincoln County, Nevada to protect the last of several large-bodied fish endemic to this area.

Additionally, the refugium will benefit the Pahranaagat speckled dace (*Rhinichthys osculus velifer*), an endemic minnow known to co-occur with the chub and listed as a sensitive fish species by the State of Nevada.

Background info to support the need:

To accomplish conservation in the Pahranaagat Valley, a critical need exists for coordinated fish recovery in the local community. Agriculture has been a dominant force in Pahranaagat Valley since the 1800s, leading to extensive diversion of water and habitat manipulation. Since most of the habitat occupied by native fish exists on private land and most water rights are used for non-wildlife purposes, conservation solutions must align with local needs to be successful. A recurring concern by the local community is that regulatory burdens associated with threatened and endangered species negatively impact private landowners. Thus, efforts such as this by federal and state agencies that prioritize management of imperiled species on public lands will help balance the efforts to conserve chub and dace on public and private lands.

A Recovery Plan for the Aquatic and Riparian Species of Pahranaagat Valley was approved in 1998 (USFWS 1998), but recovery progress has been modest. The chub historically occupied nearly 19 miles of stream, but currently only occupies approximately 2 miles (~10%) of stream habitat. Chub surveys on private lands, between 2009 and 2020, typically encounter less than 100 fish (NDOW 2009-2019). At present, a brood stock population of chub exist at the USFWS's Southwestern Native Aquatic Resources & Recovery Center in New Mexico and a small refuge population exists at the Nevada Department of Wildlife's Key Pittman Wildlife Management Area (WMA). In 2011 and 2017, attempts to establish a second chub refugium at Pahranaagat National Wildlife Refuge (NWR) failed within a year of establishment, possibly due to unsuitable water quality parameters. In general, water quality parameters are easily modified by changes to structure after critical assessment and design and is the goal of this project.

Objective 1. Conduct a habitat assessment for chub at Cottonwood Spring.

Complete a comprehensive abiotic and biotic habitat assessment (e.g., water chemistry, flow, substrate, and algae) at Cottonwood Spring on Pahranaagat NWR to determine why a chub refugium failed following establishment in 2011, and subsequently in 2017. This assessment will also examine the habitat suitability at a successful chub refugium, located at the Key Pittman Wildlife Management Area (WMA), at the north end of Pahranaagat Valley, which has maintained a viable population of chub for more than 15 years. Based on the results, a list of recommendations will be developed to improve chub habitat at Cottonwood Spring to sustain a viable chub population in perpetuity on federal lands.

A prior study of water quality conducted in 2014-15 at Cottonwood Spring did not show that water quality conditions were disadvantageous to chub (USGS 2018). However, this study was limited in scope, and focused only on temperature and dissolved oxygen with limited data collection periods. Based on the results of that study, chub was subsequently stocked into Cottonwood Spring in 2017 and monitored over the course of a year to track post-stocking survival. The results of this effort identified a mortality event over a multiple week period during January 2018 (USFWS 2019), and ultimately the effort to establish chub in Cottonwood Spring failed.

Objective 2. Redesign Cottonwood Spring and implement on-the-ground solutions.

Knowledge acquired from *Objective 1* will guide a full redesign of Cottonwood Spring to improve chub habitat, including changing pond dimensions and outflow as well as installing a reinforced polyethylene pond liner. Once a pond liner is installed, we will add gravel as a substrate and conduct re-vegetation efforts to stabilize banks. We plan to accomplish the re-vegetation work with the use of USFWS volunteers.

Additionally, we anticipate that suitable water quality and quantity parameters will require the installation of a solar well and pump system for aeration. Based on results from *Objective 1*, we may modify both pond infrastructure and the redesign approach as necessary.

Objective 3. Release of Pahrnagat roundtail chub into refugium and monitor for two years.

It is our objective to release chub into the newly redesigned habitat, in order to establish a viable refuge population. We will work with the USFWS's Southwestern Native Aquatics Research and Recovery Center to have juveniles reared from their broodstock fish. A stocking plan will be developed to maintain genetic diversity as well as the number of individuals needed for stocking. Once a population is established, we will periodically translocate individuals to sustain genetic diversity and health. A monitoring plan will be developed to track the success of the chub and dace refugium and any key changes to habitat.

Objective 4. Develop an outreach program

A main component of our NWR system is to provide environmental education experiences to visitors. Presently, the Pahrnagat NWR does not highlight the native fishes in Pahrnagat Valley. *Objective 4* develops these materials; we anticipate the development of print materials (e.g., brochures, activity guides) and a short program for guided hikes at Cottonwood Spring.

In addition to developing outreach materials for native fishes, we will work collaboratively with the Nevada Department of Wildlife on an outreach program to reduce the introduction of invasive species. The introduction of nonnative and invasive species is one of the most significant threats for fishes worldwide, and has negatively influenced the Pahrnagat Valley, including three federally protected fish species. Illegal introductions of aquarium fish (e.g., convict cichlids) in the valley date back to at least the mid-1960's (Deacon 1967).

Relationship to prior approved phases or related SNPLA projects and description of anticipated phases:

There are no previous or future phases for this project; this is a stand-alone project.

Deliverables:

- Primary deliverables
 - Provide a scientific report of abiotic and biotic habitat comparison for Cottonwood Spring and Key Pittman chub refugia.
 - Produce a report with recommendations and designs for on-the-ground (structural) modifications of Cottonwood Spring.
 - Repair/enhance the Cottonwood Spring habitat (approximately 0.5 acre) for fish survival.
 - Introduce Pahranaagat roundtail chub and Pahranaagat speckled dace into Cottonwood Spring.
 - Develop a monitoring plan to track chub numbers and measure habitat success.
 - Develop outreach materials to educate groups about desert fishes and the threats that nonnative aquatic species pose.

- Anticipated deliverables
 - Develop a protocol to assess survival and recruitment of chub and dace.
 - Develop protocol to translocate chub among populations to maintain genetic diversity.
 - Develop a Memorandum of Understanding (MOU) between the Southern Nevada Fish and Wildlife Office and Pahranaagat NWR. This MOU will define future costs and maintenance associated with ensuring this project is successful in perpetuity.

- Standard deliverables
 - NEPA compliance.
 - National Historic Preservation Act (section 106) compliance.

Project Timeframe:

The project will be completed in 5 years.

Year 1:

- Develop study proposal to assess abiotic and biotic habitat factors at Cottonwood Spring and Key Pittman chub refugia.
- Write and execute agreements to conduct study.
- Write and execute agreement to hire technician to assist with project implementation (i.e., water quality sampling, outreach material development).

Year 2-3:

- Begin rearing juvenile chub at the Southwestern Native Aquatics Research and Recovery Center.
- Develop redesign features for Cottonwood Spring based on habitat study results of existing chub refugia.
- Write and execute agreements to redesign and construct Cottonwood Spring refugium.
- Produce print material for desert fishes outreach.
- Develop interpretive program for guided hikes at Cottonwood Spring.
- Release chub in newly redesigned Cottonwood Spring refugium.

Years 4-5:

- Post-release population monitoring of survival and recruitment of chub and dace.
- Implement genetic management plan to ensure representative population.

Level of Readiness for Implementation:

Initial work to enhance Cottonwood Spring into a refugium for chub began in 2011. Attempts to establish a chub refugium failed in 2011 and 2017. Though these initial attempts were unsuccessful, we have continued to learn about the system, and with additional study and research-driven habitat enhancements, a successful refugium for chub and dace can be established.

This proposal is ready for implementation. Over 50% of initial planning has already been completed, we are ready to implement immediately.

Future Operations and Maintenance:

Operations and maintenance of the project, upon completion is the responsibility of the Fish and Wildlife Service.

Partnerships and/or contributed funds:

This project will be a collaborative effort between the Southern Nevada Fish and Wildlife Office, Pahrangat NWR, and the Nevada Department of Wildlife. Though not formally named as a partner in the proposal, the Nevada Department of Wildlife will provide monitoring and technical support as they have done for past projects at Cottonwood Spring, a total of \$59,359.

Contributed funds include:

- SNFWO Fish Biologist (1,000 hours) – \$41,490
- Pahrangat NWR Site preparation (e.g., road/habitat stabilization) - \$13,800
- USFWS volunteers for revegetation (160 hours): \$4,069
- USFWS Southwestern Native Aquatics Research and Recovery Center: spawning and rearing of chub from broodstock.
- Nevada Department of Wildlife – in-kind technical support and assist with monitoring of species and habitat.

Funding Summary:

In the development of the budget, we solicited input from within and outside the USFWS to look at different alternatives for establishing a refugium within the boundary of the Pahrangat NWR. We developed draft cost estimates and discussed alternative locations for a refugium. The final proposal considers the needs of the Pahrangat NWR, the species needs for chub and dace, as well as the costs associated with various maintenance and structural designs.

ROUND 18		
CONSERVATION INITIATIVES NOMINATION		
ESTIMATED DIRECT COSTS & KEY MILESTONES		
Project Name:	Pahrangat NWR Native Fishes Refugium	9/9/2020
Project #		U.S. Fish and Wildlife Service
Prepared by:	James Harter / James "Rob" Vinson	Agency:
Title/position:	Fish Biologist / Refuge Manager	Priority #:
		Phone #: (702) 515-5252
1 Planning & Environmental Documentation		\$1,250 0.24%
Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)		
2 FWS Consultation - Endangered Species Act		\$400 0.08%
Direct expenses or FWS consultation, if required.		
3 Direct Federal Labor to Implement Project (Payroll)		\$34,492 6.52%
For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.		
4 Project Equipment and/or Supplies and Materials		\$20,000 3.78%
Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.		
5 Travel and Per Diem for Implementation		\$8,000 1.51%
Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below		
6 Official Vehicle Use (vehicles with Federal license only)		\$0 0.00%
Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost		
7 Training (required to implement the project)		\$0 0.00%
Includes training essential/necessary for implementation of the project.		
8 Contracts, Grants, and/or Agreements		\$464,485 87.87%
CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan.		
9 Other Necessary Expenses		\$0 0.00%
(See Appendix B-11)		
Total requested/estimated budget		\$528,627 100.00%
10 Estimated agency or partner contribution		\$59,359
Total Estimated project value		\$587,986

Performance Measures:

SNPLMA Goal 1: Sustain the quality of the outdoor environment by conserving, preserving, and restoring natural, cultural, and historical resources.

- Outcome: Enhance habitat at Cottonwood Spring so that it provides a sustainable habitat for the critically endangered Pahranaagat roundtail chub and the co-occurring Pahranaagat speckled dace.
 - Output: Repair/Enhance approximately 0.5 acre of habitat at Cottonwood Spring for use as a chub and dace refugium
 - Performance Measure H6 – (Number of acres of wetland/riparian system enhanced)
 - Performance Measure H14 – (Number of recovery actions performed for threatened or endangered species recovery)
 - Performance Measure H15 – (Number of conservation actions for a species not listed under the Endangered Species Act)
 - Performance Measure O10 – (Number of volunteers used)
 - Output: Provide abiotic and biotic habitat comparison report for Cottonwood Spring and Key Pittman chub refugia.
 - Performance Measure O4 – (Number of Scientific/Technical Reports produced)
 - Report comparing abiotic and biotic habitat conditions at Cottonwood Spring chub refugium and Key Pittman chub refugium.
 - Report recommending on-the-ground solutions and design for Cottonwood Spring refugium.

SNPLMA Goal 2: Improve the quality of life for all public in urban and rural communities by enhancing recreational opportunities that connect people with the outdoor environment.

- Outcome: Improve open water habitat, which increases access to the public for recreational opportunities.
 - Output: Repair/Enhance approximately 0.5 acre of habitat at Cottonwood Spring for use as a chub refugium.
 - Performance Measure R2 – Acres of new parks or natural areas constructed or improved.

SNPLMA Strategic Plan: Other performance measures that also support the three values for sustainability, connectivity, and community.

- Outcome: Connect the local community and visitors of the Pahranaagat NWR with the natural history of the area, including desert fishes
 - Output: Develop outreach material to educate groups, especially the youth, about desert fishes as well as the impacts that nonnative aquatic species pose.
 - Performance Measure O5 – (Number of outreach contacts made)
 - Performance Measure O6 – (Number of new interpretive or education publications/signs/kiosks/displays/etc. produced)
 - Performance Measure O7 – (Number of interpretive or education presentations given and/or community events participated in or hosted)
 - Performance Measure O10 – (Number of volunteers used)

Executive Committee Strategic Plan Values:

A. Sustainability:

This project is designed to be a permanent fixture on the landscape at the Pahrnagat NWR, and will conserve unique biological diversity in the region. It will serve as a refuge for the Pahrnagat roundtail chub and Pahrnagat speckled dace. In addition to the target species, this site will provide habitat for migratory birds and amphibians (e.g., Mallards, Great Plains toad, and northern leopard frog). We anticipate this site will largely be self-sustaining with a low to moderate amount of long-term maintenance.

Having a third population of the chub in Pahrnagat Valley will increase the prospect of long-term persistence for this species, as well as meet recovery criteria for the Pahrnagat roundtail chub. Two of the six endemic fish species in Pahrnagat Valley have already been lost, through extinction or extirpation. Therefore, this project would increase the likelihood that the chub and dace populations persist.

B. Connectivity.

The conservation of chub requires habitat that supports all life-stages. The reduction in contiguous habitat (~90% reduction) limits survival at various times of year, where larval, juvenile, and adult fish require movement to suitable locations along the stream. Because habitat connectivity is compromised in the wild, the establishment of a refugium will provide a temporary stopgap to prevent extinction despite fragmented conditions. Fortunately, chub can successfully reproduce in man-made ponds, and why this proposal to enhance Cottonwood Spring would be fruitful.

The project will connect the species to waters within its natural and historical watershed, the Pahrnagat River. Establishing the refugium at Cottonwood Spring, as opposed to elsewhere, would provide a biological connection, and allow for local outreach opportunities to highlight the need for water and species conservation.

C. Community.

Lying in the rural community of Pahrnagat Valley, the Pahrnagat NWR strives to be a good neighbor to the community. By securing this refugium for the Pahrnagat roundtail chub, the USFWS respects the communities' desire that we support long-term management for the chub on public lands. By establishing a refugium on public lands, we will meet recovery criteria for the species while not adding additional threatened and endangered species regulations to private lands within Pahrnagat Valley.

Compliance with Departmental Priorities, Strategic Goal, Executive Orders (EO), or Secretarial Orders (SO).

- **Executive order #13855: Promoting Active Management of America's Forests, Range Lands to improve conditions and reduce wildfire risk.**

- The Pahranaagat NWR, located in rural Nevada, strives to be a good neighbor to the local community. Past relationships between the local community and the USFWS have not always been ideal; there has been past litigation over winter water rights in the Pahranaagat River. More recently, relationships have begun to improve, including numerous projects between the USFWS and private landowners aimed at meeting mutual goals (e.g., Russian olive removal). This proposal is a continuation of our efforts to listen to our neighbors. Specifically, we are bringing additional management of chub onto federal lands, which meets recovery goals while not creating additional regulatory burdens for private landowners.

A goal of this proposal is to address the concern of private landowners in the Pahranaagat Valley that the USFWS should shoulder more of the regulatory burden associated with the Pahranaagat roundtail chub and the Endangered Species Act. By bringing additional management of the species onto public lands, we will not create any additional regulation for private landowners in the valley while still meeting recovery criteria for the species, and furthering recovery for chub will serve to reduce the regulatory burden on private landowners in the valley.

The project as designed will achieve goals that are outlined in the Recovery Plan for the Aquatic and Riparian Species of Pahranaagat Valley (USFWS 1998). It gives us a path forward for meeting recovery criteria, which can be accomplished collaboratively by the USFWS and partners of the Pahranaagat Recovery Implementation Team.

Though not directly outlined in this proposal, the Pahranaagat NWR actively manages the project area to reduce fire risks. This includes conducting prescribed burns within the area of Cottonwood Spring. Additionally, the open water habitat created for chub can be used in emergencies for fire suppression.

- **DOI Priority #1: Create a conservation stewardship legacy second only to Teddy Roosevelt.**
 - At the Southern Nevada Fish and Wildlife Office and Pahranaagat NWR, the work we do will one day be our legacy. As stewards of the land, we hope to leave a strong legacy behind, as Teddy Roosevelt did. The refugium we have proposed will expectantly serve as an example of this for us. In addition to functioning as a refugium for the critically endangered Pahranaagat roundtail chub, this site will be beneficial to all wildlife in the area as well as being an attractive feature on the landscape to visitors of the Pahranaagat NWR.
- **DOI Priority #2: Sustainably develop our natural resources.**
 - NA
- **SO No. 3347: Conservation Stewardship and Outdoor Recreation**
 -
- **SO No. 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes and Territories**

- The Pahranaagat NWR was established for waterfowl and this site would provide a small amount of open water habitat for these species. While the refuge does provide ample hunting opportunities for waterfowl, this site will provide one of the few spots in the valley where waterfowl and other migratory birds can congregate without these pressures. Though hunting is not permitted at Cottonwood Spring, this open water habitat should still benefit nearby hunting units by providing additional habitat for target.
- **SO No. 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors**
 - In an extremely dry landscape, Cottonwood Spring provides a valuable water source for game species. Game species such as, mule deer and big horn sheep are known to occupy this area.
- **SO 3366: Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior**
 - Cottonwood Spring is open to visitors interested in wildlife viewing. In addition, the open water habitat attracts waterfowl, which can be hunted on the refuge in nearby hunt units.
- **SO 3370 Improving Conservation Stewardship and Increasing Public Access to Urban National Wildlife Refuges**
 - The Pahranaagat NWR provides hunting, fishing, and wildlife viewing opportunities to the urban population center of Las Vegas, which is located approximately 90 miles south of the refuge. The community of Las Vegas serves as the primary source of users to the refuge. This project will improve opportunities for wildlife viewing by enhancing and creating native fish and waterfowl habitat. The outreach component of this proposal will also increase public access through interpretive hikes.
- **SO 3372 Reducing Wildfire Risks on Department of the Interior Land Through Active Management**
 - Though not directly outlined in this proposal, the Pahranaagat NWR actively manages the project area to reduce fire risks. This includes conducting prescribed burns within the project area (i.e., Cottonwood Spring). Additionally, the open water habitat created for chub can be used in emergencies for fire suppression.
- **SO 3374 Implementation of the John D. Dingell, Jr. Conservation, Management and Recreation Act**
 - NA
- **SO 3376 Increasing Recreational Opportunities through the use of Electric Bikes**
 - NA

Ranking Criteria:

Criteria #1: *The nomination supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability*

1. Habitat enhancement

- **Enhances or connects habitats, migratory corridors, or protected areas** – Habitat will be enhanced for the Pahranaagat roundtail chub and the Pahranaagat speckled dace within protected habitat managed by the USFWS’s NWR system. The successful habitat will allow continuity of life-stages of fish.
- **Endangered species** – Refugium will provide an additional population of Pahranaagat roundtail chub, a critically endangered species. This will help us achieve recovery action number 4.1 ‘*Establish another refugium population in the valley for Pahranaagat roundtail chub*’.
- **Proactive steps to prevent extinction** – This project will create an increase in abundance and distribution of Pahranaagat roundtail chub and Pahranaagat speckled dace. Having redundancy in populations protects against stochastic events that can lead to population crashes.
- **Invasive species treatment and/or control** – The establishment of the refugium includes nonnative removal efforts (e.g., desiccation) for the red swamp crayfish. Additionally, the outreach component will help prevent the future introduction of new invasive and nonnative species.
- **Restoration of habitat for sensitive species at the watershed or landscape level** – Project will enhance habitat conditions for the Pahranaagat roundtail chub and Pahranaagat speckled dace within their native watershed.
- **Project addresses climate change** – Climate change models predict both higher temperatures and associated evaporation rates. Refugium construction designs (depth, cover, aeration, etc.) will minimize effects of unsuitable habitat change and increase survival.
- **Water quality and quantity monitoring** – Year one of the project will focus on collecting and analyzing water quality and quantity data. The results of this study will be used to guide the redesign of the Cottonwood Spring chub refugium.
- **Restoration of springs/streams/rivers** – Approximately 0.5 acres of spring outflow habitat will be enhanced as part of this project
- **Reintroduction of extirpated species to restore overall ecosystem** – Pahranaagat roundtail chub and Pahranaagat speckled dace will be reintroduced to the Pahranaagat NWR within their historic watershed into a section of the ecosystem from which they have been extirpated.

2. Cultural Resources

- **Surveys** – Prior to any ground disturbing activities, the proposed project area will be surveyed for cultural resources.
- **Project includes tribal involvement and/or consultation** – The USFWS will consult with the Nuwuvi Tribe.

3. Public Health and Safety

- **Information kiosk and signs** – Print materials that educate about desert fishes and invasive nonnative aquatic species will be produced. We do not anticipate installing a kiosk but may develop signage for display at the visitor center.

- **Project addresses and mitigates adverse impacts to resources caused by the volume of people using the resource** – This project mitigates the impacts to aquatic resources within Pahrnagat Valley by providing a permanently protected location for the Pahrnagat roundtail chub. Over 90% of the historical habitat for the species has been lost to agricultural developments within the valley.

Criteria #2. *The nomination promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support*

1. Conserves resources to ensure availability to future generations through management of natural and/or cultural resources for current public benefit and sustainable social and economic utilization.
 - This project will aid in the protection of the Pahrnagat roundtail chub for future generations. This site will be managed on public lands in perpetuity and outreach material will be developed to share their local and natural history.
 - **Conserve or restore the functionality, resilience, and integrity of biological communities and/or cultural resources through prudent management and prevention of injury, decay, waste, and loss.**
 - We will restore functionality of waters on the Pahrnagat NWR for chub and dace. These species both existed at the Pahrnagat NWR historically and to re-establish and to manage these populations on federally protected lands is beneficial to the entire ecosystem.
 - **Will remain relevant and continue to provide a benefit beyond existence of SNPLMA.**
 - The refugium is designed to be a long-term feature on the landscape and will be preserved in perpetuity. It will continue to provide benefits to wildlife beyond the existence of SNPLMA.

Criteria #3. *The nomination promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites*

- *Encourage people to meaningfully connect with their natural environment and helps them appreciate and care for the environment by providing information and resources to educate and engage people in understanding their role in protection and maintaining the natural environment by providing opportunities for them to connect to the natural resources directly or virtually, or provides education of the environment*
 - We will develop an outreach component that will connect people with nature. This will include print materials as well as guided hikes at Cottonwood Spring, and potentially signage at the visitor center.
- *Project has identified committed non-SNPLMA sources of funding or in-kind contribution for the planning, design, and development of the project.*
 - The Southern Nevada Fish and Wildlife Office and Pahrnagat NWR will provide in-kind contributions through staff biologist time. The USFWS's southwestern Native Aquatics Research and recovery center will provide in-kind contributions through the spawning and rearing of broodstock. The Nevada Department of

Wildlife will provide technical support and assistance with monitoring of species and habitat.

- *Preserves the past (cultural or historic sites) for present of future generations. (5 points)*
 - The project will preserve habitat for Pahranaagat roundtail chub on the Pahranaagat NWR in perpetuity.

Criteria #4. *The nomination promotes sustainability, connectivity, and community by connecting people to nature and recreational opportunities by uniting communities with important places across the landscape. The nomination enhances partnerships to promote cooperation and collaboration.*

- *The nomination addresses and meets the needs of more than one agency (federal or state)*
 - The proposal strongly aligns with the needs of both the USFWS and NDOW in conserving and meeting restoration and recovery goals for chub and dace.
- *The nomination involves non-Federal, public partners, citizen groups or organizations in the development and accomplishment of resource management goals and other activities to prevent waste, damage or neglect.*
 - The proposal was developed with input from NDOW and we anticipate their involvement with many aspects of this project. We will also use volunteers for re-vegetation efforts.
- *The nomination clearly defines and includes a stewardship component (Federal or non-Federal) to broaden support and reduce long-term costs by minimizing the human impact on the environment through an education plan with clear curricula and achievable goals and objectives.*

There is a clearly defined environmental educational component that will focus on natural history, desert fishes, and impacts of aquatic nonnative species.

Criteria #5. *The nomination has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project*

- *Volunteer labor – valuation to be computed at the rate used by the Department of Interior, which is currently \$21.36 per hour.*
 - We are planning for 1-2 volunteer events to accomplish objectives identified as part of the proposal. The volunteer events would be used to complete re-vegetation and seeding after ground-disturbing activities occur at Cottonwood Spring.
- *Salaried employees – actual hourly rate plus the value of any fringe benefits received.*
 - The Southern Nevada Fish and Wildlife Office will provide at least 200 hours of a staff fish biologist's time (GS-9 or greater) per year for the 5 year duration of the project. The Pahranaagat NWR will provide 150 hours of staff time for road and habitat stabilization efforts associated with on-the-ground activities.
- *Actual costs for material, equipment, and supplies should be used.*

The Southern Nevada Fish and Wildlife Office will establish an MOU with the Pahranaagat NWR to clarify the roles and responsibilities of maintenance, upkeep of equipment, and other associated costs.

Criteria #6 *Advances the Agency/Entity Priorities. The proposed project specifically identifies what and how the nomination/project meets the priorities and strategic goals for their respective agency.*

- Yes

Criteria #7. *Consistency with Executive (EO) and Secretarial Orders (SO). The proposed project specifically identifies what and how the nomination/project meets the EO and/or SOs.*

- Yes

The remainder of this page intentionally left blank.

Maps:

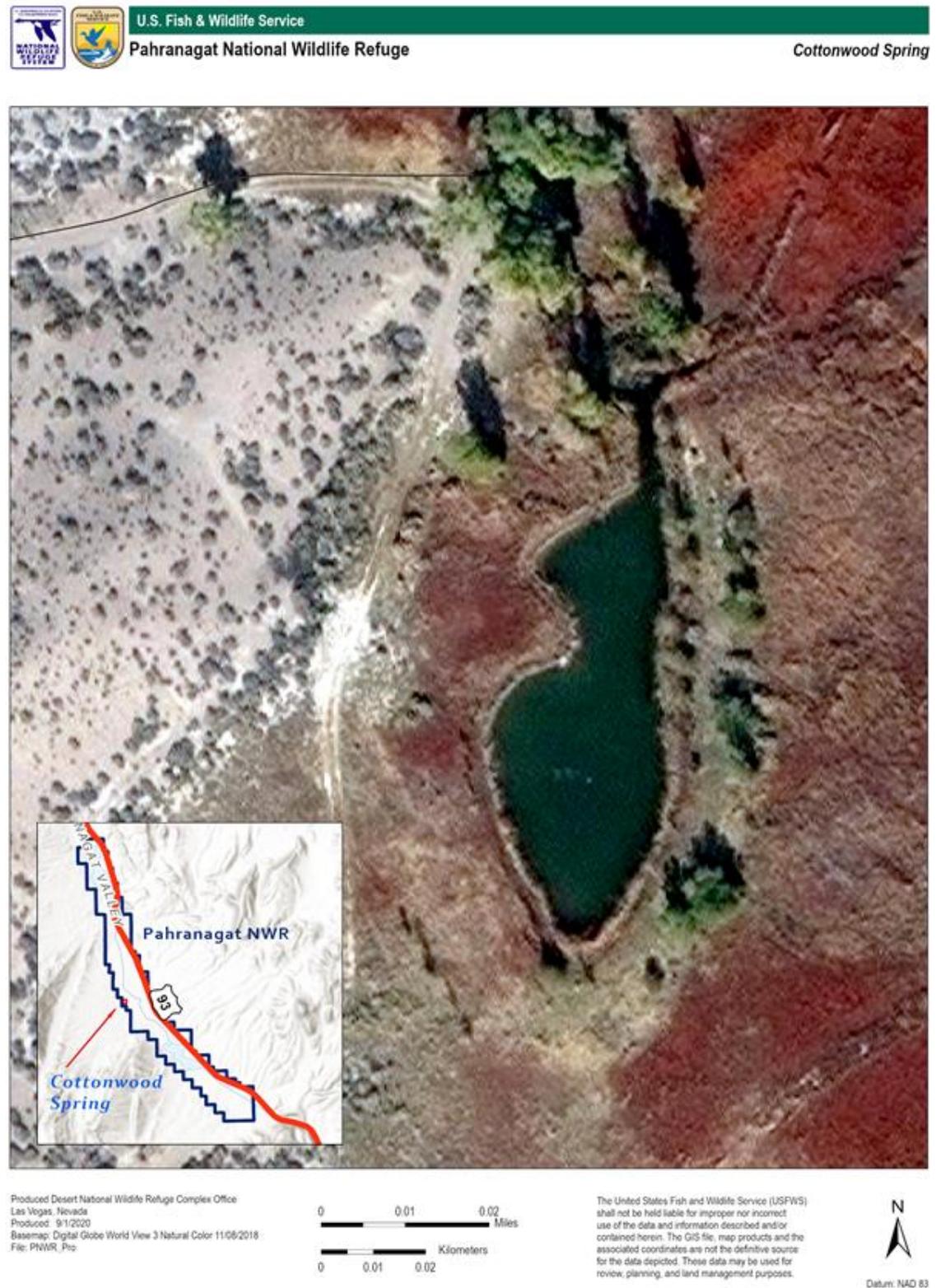


Figure 1 Location map and aerial imagery, project site is approximately 74 miles north of Las Vegas, Nevada/

Photos

None

Letters of Support:

1. Lincoln County Conservation District
2. State of Nevada, Department of Wildlife

The remainder of this page intentionally left blank.

LINCOLN COUNTY CONSERVATION DISTRICT
360 Lincoln Street, PO Box 445
lincolncountycdncv@gmail.com 775 726-3101

Protecting our resources for future generations

September 8, 2020

Robert Wandel
Assistant District Manager - SNPLMA Division
Bureau of Land Management
4701 N. Torrey Pines Dr.
Las Vegas, NV 89130

Mr. Wandel:

I am writing a letter of support for the Pahranaagat NWR Native Fishes Refugium project. This project will enhance a pond at Cottonwood Spring to create a safe refuge for endangered Pahranaagat roundtail chub on federal land. This fish currently occurs only on private land in Pahranaagat Valley and in a refugium on Nevada Department of Wildlife's Key Pittman Wildlife Management Area.

The mission of the Lincoln County Conservation District (LCCD) is to protect and improve the quality of our soil, water, and natural resources by providing programs and services to the citizens of Lincoln County. We believe that conservation decisions should be made at the local level with a focus on voluntary, incentive-based actions. We believe in partnerships and participate and coordinate accordingly between state, private, and federal interests. We have always been concerned that the regulatory burdens associated with endangered species are impactful to private landowners. We believe federal and state agencies should prioritize management of these species on public lands. Pahranaagat roundtail chub occur primarily on private land in the Pahranaagat Valley, therefore we welcome opportunities for it to be better managed on Pahranaagat NWR itself.

LCCD fully supports the Pahranaagat NWR Native Fishes Refugium SNPLMA Round 18 Proposal. If you have any questions or concerns, please contact me to discuss.

Sincerely,



Maggie Orr, Vice-Chair Lincoln County Conservation District



STATE OF NEVADA
DEPARTMENT OF WILDLIFE

6980 Sierra Center Parkway, Suite 120
Reno, Nevada 89511
Phone (775) 688-1500 • Fax (775) 688-1495

TONY WASLEY
Director

LIZ O'BRIEN
Deputy Director

JACK ROBB
Deputy Director

September 3, 2020

Robert Wandel
Assistant District Manager - Southern Nevada Public Lands Management Act Division
Bureau of Land Management
4701 N. Torrey Pines Dr.
Las Vegas, Nevada 89130

RE: Letter of Support for Round 18 Nomination for Pahrnagat National Wildlife Refuge
Native Fishes Refugium

Dear Mr. Wandel:

It is our understanding that the US Fish and Wildlife Service (Service) will be submitting a request for Conservation Initiative funding through Round 18 of the Southern Nevada Public Lands Management Act (SNPLMA) to enhance habitat and develop a refugium for Pahrnagat Roundtail Chub *Gila robusta jordani* at Cottonwood Spring, Pahrnagat National Wildlife Refuge (PNWR), Lincoln County, Nevada. This project will improve available habitat and provide habitat stability for not only Pahrnagat Roundtail Chub, but also for Pahrnagat Speckled Dace *Rhinichthys osculus velifer*, another native fish endemic to Nevada and the Pahrnagat Valley. The Nevada Department of Wildlife (NDOW) strongly supports the Service's Round 18 SNPLMA proposal to enhance habitat and establish a native fishes refugium at the PNWR.

The Pahrnagat Roundtail Chub is not only native to Nevada, but it is endemic to the Pahrnagat Valley. The species is listed as endangered under the Service's Endangered Species Act and by the State of Nevada (NAC 503.065). Population surveys conducted by NDOW during 2009-2020 shows the wild population is usually fewer than 100 fish, making this one of the most imperiled populations of native fish in Nevada and the western US. Its historic distribution spanned approximately 19 miles of stream, but its current distribution is restricted to about 2 miles, with the wild population occurring entirely on private land. Alteration of the natural river system, diversion of water, and introductions of nonnative fishes are the primary threats causing the reduction in distribution and population size and structure. A critical need

exists to establish additional, secure populations of Pahrnagat Roundtail Chub to lessen the risk of extinction and promote recovery.

The development and utilization of aquatic refugium habitats has proven to be a necessary and critical tool for managing and conserving desert fishes in Nevada and across the southwestern US. NDOW has successfully maintained refugium habitat and a refugia population of Pahrnagat Roundtail Chub at its Key Pittman Wildlife Management Area (WMA). The habitat at Key Pittman WMA is a pond-like habitat supported by a primary and backup well. This habitat has proven successful at supporting a sustainable population of Pahrnagat Roundtail Chub. NDOW is committed to working collaboratively with the Service and will provide the Service full access to the site at Key Pittman WMA to collect biological and environmental data that could be used to inform design and development of the refugium at PNWR.

Establishing a refugia on public lands such as the PNWR provides a unique and beneficial opportunity to connect the local community and all members of the public to native wildlife and for public agencies to highlight efforts being undertaken to conserve natural resources. NDOW is committed to providing technical assistance and developing outreach information for this project. The Service and NDOW have a long history of working collaboratively at PNWR and throughout the Pahrnagat Valley to conserve wildlife and manage habitat for wildlife. Again, NDOW strongly supports the Service's application for SNPLMA Round 18 funding to enhance habitat and establish a native fishes refugium at the PNWR. We look forward to continuing to work cooperatively with the Service to implement recovery strategies for Pahrnagat Roundtail Chub and enhance habitat for the species in the Pahrnagat Valley. If you have any questions or need additional information in regards to this letter of support, please contact me at (775) 688-1530 or at sjoberg@ndow.org. Thank you for your consideration.

Sincerely,



Jon C. Sjöberg
Chief, Fisheries Division
Nevada Department of Wildlife

cc:

James Harter, Fisheries Biologist, Las Vegas FWO, US Fish and Wildlife Service, Las Vegas, NV
Brandon Senger, Supervising Fisheries Biologist, Nevada Department of Wildlife, Las Vegas, NV

SNPLMA Round 18
CI – National Park Service Addendum

Nomination: Tab 9

Entity: National Park Service, Great Basin National Park

Project: Protecting Wild Caves

Revision: Overall budget request was reduced from \$2,249,318 to \$2,247,095 due to the inflation rate for federal personnel labor for planning was adjusted from 5% to 0%.

Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

United States Department of the Interior
National Park Service
Great Basin National Park



Protecting Wild Caves

Amount Requested: \$2,247,095

Lead Agency: Great Basin National Park
Participating Agency: USDA Forest Service

Congressional District NV-4
Timeframe: 5 Years
Location: 39.282135° / -114.620673°

Project Manager: Gretchen Baker
Gretchen_Baker@nps.gov
Great Basin National Park
100 Great Basin National Park
Baker, NV 89311
775-234-7541 (office)
435-406-1041 (cell)

Purpose Statement:

The National Park Service in partnership with the U.S. Forest Service (USFS) will oversee paleontological, archeological, geological, hydrological, and biological inventories at caves in selected mountain ranges of White Pine County to better manage the valuable, non-renewable resources found within them.

Background info to support the need:

The National Park Service (NPS; lead agency) and USFS will conserve wild caves in four mountain ranges of White Pine County while providing enhanced recreational opportunities. This project will include providing specialist reports of what is contained in these caves; an ethnographic study; preservation of cave rock art; education and outreach via a wild cave simulation trailer, a new wild cave tour, and a virtual wild cave tour; interpretive signs; and in-depth studies that may reveal new species to science, plus important paleontological, geological, hydrological, and archaeological finds.

Based on survey results, caves and cave resources will be protected by identifying appropriate activities to improve access for recreation and educational activities. Some caves may have additional studies to better understand them, such as Carbon-14 dating to find out ages of animal bones, dye-tracing to understand water flows through caves, ice studies to determine age and climate conditions, and in-depth cave biota inventories to search for new species to science.

An ethnographic assessment and context will be prepared for caves based on a landscape perspective preferred by the Tribes. This will provide important information for caves on both NPS and USFS lands and will support Section 110 of the National Historic Preservation Act to identify and gather information for site evaluation.

Interpretive signs will be installed outside some caves to help educate the public about their value. Selected caves damaged by vandalism and careless human use may be restored. A wild cave simulation trailer will be hosted at Great Basin National Park (GRBA) and taken to local schools to provide interpretation and education about wild caves. In addition, a Wild Cave Tour will be developed and implemented in the back part of Lehman Caves. For those that can't make it to the remote parts, a Virtual Cave Tour will be produced using LiDAR scanning. Cave access points (e.g. cave entrances and parking areas) will be patrolled to determine visitation, reduce vandalism, and provide conservation information.

NPS will consult with area tribes to develop and implement protection and educational material for sensitive cultural and natural resources at Upper and Lower Pictograph Caves in Great Basin National Park. A road adjacent to these caves funnels blowing dust down the canyon and concentrates at the narrows, depositing on the sensitive rock surfaces and pictographs. The NPA harden the road surface for approximately 0.25 miles and parking area with access to a viewing platform for dust mitigation and to improve accessibility. Interpretive media, outside the cave entrance will educate visitors. Rock art conservation specialists will assess condition of the pictographs and clean dust from the images to improve their condition and protect them from further damage.

The project will focus on caves in the South Snake Range (GRBA), and the North Snake Range, Schell Creek Range, Ruby Mountains, White Pine Range, and Egan Range (USFS) in White Pine County, Nevada.

White Pine County contains more than 80 caves, including the longest, deepest, and highest elevation caves in the state of Nevada. The NPS manages about 40 caves and the USFS manages about 20 caves. Some caves have amazing paleontological resources, such as the extinct short-faced bear, a replica of which is displayed at the White Pine Public Museum in Ely. Caves are important to area Tribes and are both an ethnographic and archeological resource, containing rock art and artifacts. Some caves were used by native people to protect the deceased. Some endemic species of invertebrates such as millipedes, pseudoscorpions, and amphipods are found only in the caves of White Pine County and nowhere else on earth. Caves also provide insights into geological processes that formed the area. Caves in White Pine County are known to contain a variety of speleothems, including some that are quite rare, like hydromagnesite balloons and folia. A deeper understanding of the cave resources will allow for better protection of these non-renewable resources with interpretive and educational materials. Due to the Federal Cave Resources Protection Act (FCRPA), the specific locations of most caves are not shown or discussed in this proposal.

Upper and Lower Pictograph Caves contain pictographs that are hundreds of years old, providing important archaeological information, but they are located next to a dusty dirt road in Great Basin National Park. Although signs at the entrance tell the public not to enter, trail cameras have shown that trespassing is common, and some vandalism has occurred in the caves. By educating visitors and building a deck with railings and interpretive signs, we believe we can decrease the trespass rate and vandalism.

A cave simulation trailer will help the public understand what it is like to go wild caving and the importance of cave conservation. Development of a Wild Cave Tour in Lehman Caves will provide the opportunity for the public to receive some training on how to do wild caving safely, as well as an introduction to cave geology, cave biology, and cave conservation. For those who cannot navigate the rough wild cave environment, a Virtual Cave Tour will be developed using LiDAR scanning. This will allow for potential 3D products to immerse the public in the wild cave environment while teaching them low impact techniques.

Caves are often overlooked resources, as they are hidden from easy observation and satellite view (e.g., Google Earth imagery) and some are very difficult to traverse. Yet caves protect resources for very long time periods, as they have constant temperatures and humidity and few disturbances, outside of humans.

Eastern Nevada has the densest concentration of caves in the state. Increased visitation to this area (e.g., nearly doubling the number of visitors to Great Basin National Park in the last decade) means that more people are visiting caves. In order to best protect these delicate resources, more studies are needed to find which caves are most sensitive and require or warrant additional protections and which caves are most appropriate for recreational use.

The Federal Cave Resources Protection Act (FCRPA) of 1988 aims “to secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment, and benefit of all people; and to foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on Federal lands for scientific, education, or recreational purposes.” This project would help Federal land management agencies know their resources better and thus be able to manage them better. Inventories by experts will provide valuable baseline information that otherwise would not be available. Inventories will help land managers decide which caves are most appropriate for recreation, which might need cave gates to protect delicate resources, which need interpretive signs to better orient the public and help them appreciate the cave resources, and which need cave restoration to remove trash or graffiti.

The Archaeological Resources Protection Act of 1979 (ARPA) was enacted “...to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals (Sec. 2(4)(b)). This project will help meet ARPA by conducting in-depth archaeological inventories of caves, particularly Upper and Lower Pictograph Caves, and by protecting the rock art there. The collaborative approach will foster increased cooperation and exchange of information.

The Paleontological Resources Preservation Act of 2009 (PRPA) (16 U.S.C. § 470aaa 1-11) directs the Department of Agriculture (U.S. Forest Service) and the Department of the Interior (National Park Service, Bureau of Land Management, Bureau of Reclamation, and Fish and Wildlife Service) to manage and protect paleontological resources on Federal land using scientific principles and expertise. “The Secretary shall develop appropriate plans for inventory, monitoring, and the scientific and educational use of paleontological resources, in accordance with applicable agency laws, regulations, and policies. These plans shall emphasize interagency coordination and collaborative efforts where possible with non-Federal partners, the scientific community, and the public. This project helps to gain information needed to best manage these caves while using interagency coordination and collaborative efforts.

This project will develop cave maps for all surveyed caves. Cave maps are important to accurately document where resources occur, for use during cave rescues, and in order to determine if there is a trend for caves to occur in an area (e.g., multiple caves all occur along a fracture). Some caves already have cave maps, and this project will ensure that all meet National Speleological Society (NSS) standards.

The mission of the National Park Service is to preserve unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The mission of the US Forest Service is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations. Forest Service's priorities include being good neighbors, promoting shared stewardship by increasing partnerships and volunteerism, improving the condition of its forests, and enhancing recreation opportunities, all of which are supported through this project. The project goals align well with both these missions and the SNPLMA goals of increased sustainability, connectivity, and community.

This project is focused on increasing sustainable safe recreational opportunities and protecting irreplaceable resources, connecting visitors and the public with their public lands, and serving communities through outreach, education, tribal consultation, and volunteerism.

Relationship to prior approved phases or related SNPLA projects and description of anticipated phases:

This project is a stand-alone, one-time, non-phased, viable project. Additional SNPLMA funds will not be requested for this action. This project is partially based on:

- SNPLMA Round 8 “Restore Natural Processes and Cave Floor in Lehman Cave,” which restored a wild part of Lehman Caves; it is a portion of this area of the cave that will be developed for a Wild Cave Tour.
- SNPLMA Round 10 Conservation Initiatives “USFS White Pine County Cave Resources Assessment,” which did preliminary inventory on 20 USFS caves. This inventory provided basic information such as where the cave was located, its main features, and a basic map. These caves did not receive the specialist attention that is proposed for this project.
- SNPLMA Round 15, “Lehman Caves Visitor Center Exhibits,” which provides excellent displays about caves in general, covering cave geology, biology, and history.
- SNPLMA Round 16 Conservation Initiatives Project NP78, “Can land managers prevent the ‘inevitable collapse’ of bats in the western US?”, which studied bats in depth at various mines and caves.

Information collected in previous SNPLMA projects will help in planning more detailed inventories for this project.

Deliverables:

- Primary deliverables
 - National Park Service:
 - Report with detailed paleontological, archeological, biological, hydrological, and geological information for up to 30 NPS-managed caves in the South Snake Range.
 - An ethnographic assessment and ethnohistory context for NPS-managed caves in the South Snake Range
 - Maps, inventories, and high-quality photos for up to 30 caves
 - Protective measures and educational material at Upper and Lower Pictograph Caves
 - Reduction of dust on 0.25-miles of gravel road adjacent to Upper and Lower Pictograph Caves to protect pictographs
 - U.S.D.A. Forest Service:
 - Report with detailed paleontological, archeological, biological, hydrological, and geological information for up to 15-USFS managed caves in the North Snake Range, Schell Creek Range, Ruby Mountains, White Pine Range, and Egan Range in White Pine County, Nevada.
 - Maps, inventories, and high-quality photos for up to 15 caves

- Anticipated deliverables
 - National Park Service:
 - Provide wild cave education and interpretation using a cave simulation trailer, a Wild Cave Tour at Lehman Caves, a Virtual Wild Cave Tour, and curriculum [Project Underground](#), which meets many of state and national education standards
 - Construct up to 3 cave gates, as needed, to protect sensitive resources
 - Clean up and restoration of up to 3 caves
 - Install interpretive signs at up to 5 caves
 - Social media outreach via Instagram, YouTube, Twitter, and Facebook accounts
 - Great Basin NP accounts have more than 25,000 followers
 - anticipated 10 messages per year for 4 years = 1,000,000 views
 - Up to two peer-reviewed publications
 - Articles highlighting project and accomplishments in the Park Natural Resource newsletter (*The Midden*)
 - Up to two presentations at professional meetings
 - Increased partnerships with local grottos for survey, inventory, monitoring, and clean-up
 - Report for selected caves of paleontological and archeological artifact dating with Carbon-14 dating
 - Report for selected caves of perennial cave ice source and age
 - Report for selected caves of cave biota not previously been described to science or documented before in White Pine County.
 - Report for selected caves of hydrological pathways using dye tracing for caves with streams or fluctuating water tables
 - Educational materials about the caves of White Pine County to school and community groups and newspapers
 - U.S.D.A. Forest Service:
 - Construct up to 5 cave gates, as needed, to protect sensitive resources
 - Clean up and restoration of up to 5 caves
 - Install interpretive signs at up to 5 caves
 - An ethnographic assessment and ethnohistory context for USFS-managed caves
 - Up to two peer-reviewed publications
 - Up to two presentations at professional meetings
 - Increased partnerships with local grottos for survey, inventory, monitoring, and clean-up
 - Report for selected caves of paleontological and archeological artifact dating with Carbon-14 dating
 - Report for selected caves of cave biota not previously been described to science or documented before in White Pine County.
 - Report for selected caves of hydrological pathways using dye tracing for caves with streams or fluctuating water tables

- Standard deliverables
 - National Park Service:
 - Specialist's review of project documents
 - Detailed implementation plan will be developed and entered into a SNPLMA access database
 - NEPA
 - Section 106
 - Develop a Scope of Work for contracting and cooperative agreements
 - Budget Tracking
 - Quarterly and annual reporting will be completed
 - Final project report will be prepared and submitted
 - SNPLMA close-out package
 - U.S.D.A. Forest Service:
 - Specialist's review of project documents
 - Detailed implementation plan will be developed and entered into a SNPLMA access database
 - NEPA
 - Section 106
 - Preparation of Wilderness Administration Documents (Minimum Requirements Decision Guide)
 - Develop a Scope of Work for contracting and cooperative agreements
 - Budget Tracking
 - Quarterly and annual reporting will be completed
 - Final project report will be prepared and submitted
 - SNPLMA close-out package

Project Timeframe:

The project is expected to last 5 years from the initiation date.

- Year 1
 - initiate NEPA, NHPA Section 106
 - tribal consultation, hiring,
 - contracts and agreements
 - initiate equipment purchasing
 - initiate design and planning for deck, signs, and road hardening at Upper and Lower Pictograph Caves
- Year 2
 - continue any needed compliance
 - initiate inventories, mapping, and ethnographic assessment
 - initiate contracting for cave simulation trailer and virtual wild cave tour
 - patrols to cave entrances once a week during busy season
 - develop Wild Cave Tour
- Year 3
 - Continue inventories and mapping

- begin deck, signs
 - road hardening for Upper and Lower Pictograph Caves
 - Start using cave simulation trailer,
 - begin Wild Cave Tours,
 - launch Virtual Wild Cave Tour
 - patrols to cave entrances once a week during busy season
- Year 4 –
 - continue inventories and mapping if needed
 - conduct more in-depth studies
 - continue work at Upper and Lower Pictograph Caves including pictograph cleaning and conservation
 - develop and provide educational materials
 - clean up and restoration
 - cave gating, if needed
 - install cave signs
 - continue using cave simulation trailer and providing Wild Cave Tours
 - patrols to cave entrances once a week during busy season
 - Year 5 –
 - complete any aspects of project not yet completed
 - continue educational outreach
 - project close-out

Level of Readiness for Implementation:

The National Park Service, Great Basin National Park and the Forest Service will initiate implementation of the project within one year of notification of funds availability (NOFA). The park and their partners have much of the staff, training, and resources necessary to implement this project. Staff include:

Future Operations and Maintenance:

Upon completion, the Park Service and Forest Service shall be responsible for operations and maintenance of the program.

Partnerships and/or contributed funds:

Two partners/non-governmental organizations, Northern Nevada Grotto of the National Speleological Society and Southern Nevada Grotto, NSS, have committed a minimum 1,260 hours towards this project while active.

Funding Summary:

Volunteer caving groups, the Northern Nevada Grotto and the Southern Nevada Grotto, have both written letters of support stating that they will provide volunteers to assist with the project's implementation, thus reducing the overall project budget. Completion of this project will result in significant long term increases in the protection of cave resources and in the ability of the visiting public to experience Upper and Lower Pictograph Caves with a fuller experience while

protecting the caves better. This project is expected to provide these benefits for the next 20 years.

ROUND 18			
CONSERVATION INITIATIVES NOMINATION			
INTERAGENCY SUMMARY			
Project Name:	Protecting Wild Caves	Date prepared:	9/9/2020
Project #		Agency:	Interagency Project
Prepared by:	NPS - lead agency, USFS	Priority #:	
Title/position:	Gretchen Baker, Ecologist	Phone #:	775-234-7541
1 Planning & Environmental Documentation		\$44,460	1.98%
Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)			
2 Consultation - Endangered Species Act		\$10,500	0.47%
Direct expenses for FWS consultation. <i>Includes all labor, agreements, and costs for Section 7 review and approval.</i>			
3 Direct Federal Labor to Implement Project (Payroll)		\$223,980	9.97%
For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.			
4 Project Equipment and/or Supplies and Materials		\$88,450	3.94%
Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.			
5 Travel and Per Diem for Implementation		\$0	0.00%
Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below			
6 Official Vehicle Use (vehicles with Federal license only)		\$32,400	1.44%
Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost			
7 Training (required to implement the project)		\$26,500	1.18%
Includes training essential/necessary for implementation of the project.			
8 Contracts, Grants, and/or Agreements		\$1,778,805	79.16%
CESU, IGO, Assistance agreements, Task Orders, and/or contracts with eligible entities for implementation of the project. Also includes all costs for construction/implementation of the plan. <i>The period of performance for grants or agreements and contracts must not extend past the approved period of performance in the approved Work Plan. Final invoices and de-obligation of unexpended funds must be paid and sub agreements and contracts closed prior to submitting the request for closeout to the SNPLMA Division</i>			
9 Other Necessary Expenses		\$42,000	1.87%
(See Appendix B-11)			
Total requested/estimated budget		\$2,247,095	100.00%
10 Estimated agency or partner contribution		\$90,642	
Total Estimated project value		\$2,337,737	

NPS Budget and Detailed costs:

ROUND 18			
Conservation Initiatives Nomination			
ESTIMATED DIRECT COSTS & KEY MILESTONES			
Interagency/SNAP Project only			
<input checked="" type="checkbox"/> Lead agency <input type="checkbox"/> Partner agency			
Project Name:	Protecting Wild Caves	Date prepared:	9/9/2020
Project #	Assigned by SNPLMA	Agency:	NPS (lead), USFS
Prepared by:	Gretchen Baker,	Priority #:	Assigned by SNPLMA
Title/position:	Ecologist	Phone #:	775-234-7541
1	Conceptual Planning, NEPA Process, and Environmental Documentation	\$23,160	1.33%
	Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)		
2	FWS Consultation - Endangered Species Act and Tribal consultation	\$8,000	0.46%
	Direct expenses for FWS consultation. <i>Includes all labor, agreements, and costs for Section 7 review and approval.</i>		
3	Direct Federal Labor to Implement Project	\$198,980	11.47%
	For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.		
4	Project Equipment and/or Supplies and Materials	\$63,450	3.66%
	Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.		
5	Travel and Per Diem for Implementation	\$0	0.00%
	Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below		
6	Official Vehicle Use (vehicles with Federal license only)	\$21,600	1.24%
	Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost		
7	Training (required to implement the project)	\$24,500	1.41%
	Includes training essential/necessary for implementation of the project.		
8	Contracts, Grants, and/or Agreements	\$1,372,770	79.10%
	CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan. <i>The period of performance for grants or agreements and contracts must not extend pas the approved period of performance in the approved Work Plan. Final invoices and de-obligation of unexpended funds must be paid and sub agreements and contracts closed prior to submitting the request for closeout</i>		
9	Other Necessary Expenses	\$23,000	1.33%
	(See Appendix B-11)		
Total requested/estimated budget		\$1,735,460	100.00%
10	Estimated agency or partner contribution	\$90,642	
Total Estimated project value		\$1,826,102	

Forest Service Budget and Detailed costs.

ROUND 18			
Conservation Initiatives Nomination			
ESTIMATED DIRECT COSTS & KEY MILESTONES			
Interagency/SNAP Project only			
<input type="checkbox"/>	Lead agency		
<input checked="" type="checkbox"/>	Partner agency		
Project Name:	Protecting Wild Caves	Date prepared:	9/4/2020
Project #		Agency:	USFS, NPS (lead)
Prepared by:	Doug Powell	Priority #:	
Title/position:	USFS Geologist	Phone #:	775-289-5125
1	Conceptual Planning, NEPA Process, and Environmental Documentation	\$21,300	4.16%
	Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)		
2	FWS Consultation - Endangered Species Act and Tribal consultation	\$2,500	0.49%
	Direct expenses for FWS consultation. <i>Includes all labor, agreements, and costs for Section 7 review and approval.</i>		
3	Direct Federal Labor to Implement Project	\$25,000	4.89%
	For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.		
4	Project Equipment and/or Supplies and Materials	\$25,000	4.89%
	Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.		
5	Travel and Per Diem for Implementation	\$0	0.00%
	Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below		
6	Official Vehicle Use (vehicles with Federal license only)	\$10,800	2.11%
	Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost		
7	Training (required to implement the project)	\$2,000	0.39%
	Includes training essential/necessary for implementation of the project.		
8	Contracts, Grants, and/or Agreements	\$406,035	79.36%
	CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan. <i>The period of performance for grants or agreements and contracts must not extend pas the approved period of performance in the approved Work Plan. Final invoices and de-obligation of unexpended funds must be paid and sub agreements and contracts closed prior to submitting the request for closeout</i>		
9	Other Necessary Expenses	\$19,000	3.71%
	(See Appendix B-11)		
Total requested/estimated budget		\$511,635	100.00%
10	Estimated agency or partner contribution	\$0	
Total Estimated project value		\$511,635	

Performance Measures:

Outcome: Sustain the quality of wild caves in White Pine County by conserving, preserving, and restoring natural, cultural, and historical resources.

- Output (Primary and Anticipated Deliverables): Report with detailed paleontological, archeological, biological, hydrological, and geological information for up to 45 caves in White Pine County. High-quality photos of each cave and the resources it contains. Maps and inventories for each cave. Conduct, in-depth surveys, as needed, such as cave biota, carbon-14 dating, ice studies, and dye tracing.
 - Performance Measure H5
 - Performance Measure H15
 - Performance Measure C3
 - Performance Measure O4
 - Performance Measure O9
 - Performance Measure O10
 - Performance Measure O11
 - Performance Measure O12
- Output (Primary Deliverable): An ethnographic assessment and ethnohistory context for White Pine County caves
 - Performance Measure C3
 - Performance Measure O4
- Output (Primary Deliverable): Harden 0.25 miles of road adjacent to Upper and Lower Pictograph Caves to reduce the amount of dust impacting prehistoric pictographs. Cleaning and conservation of pictographs.
 - Performance Measure C1
 - Performance Measure C2
 - Performance Measure C3
 - Performance Measure H17
 - Performance Measure R3
- Output (Anticipated Deliverables): Installation of up to 8 bat gates on highest priority caves
 - Performance Measure R3

Outcome: Enhance recreational opportunities that connect people with caves and cave conservation. Achieving the following outputs will accomplish this outcome:

- Output (Primary Deliverable): Educational material at Upper and Lower Pictograph Caves
 - Performance Measure R3
 - Performance Measure O5
 - Performance Measure O6
- Output (Anticipated Deliverables): Clean up and restoration of up to 8 caves; Interpretive signs at up to 10 caves; increased partnerships with local grottos for survey, inventory, monitoring, and clean-up
 - Performance Measure R3
 - Performance Measure O5
 - Performance Measure O10

- Output (Anticipated Deliverable): Acquire Wild Cave simulation trailer
 - Performance Measure R3
 - Performance Measure O5

Outcome: Increase awareness and appreciation for wild caves through social media, and educational programs and products. Achieving the following outputs will accomplish this outcome:

- Output (Anticipated Deliverable): Acquire Wild Cave simulation trailer and conduct 15 education programs at local schools; conduct 15 months of education programs at Great Basin National Park
 - Performance Measure O5
 - Performance Measure O7
- Output (Anticipated Deliverables): Install interpretive signs outside Upper and Lower Pictograph Caves, along with selected other caves; Two peer-reviewed publications; Articles highlighting project and accomplishments in the Park Natural Resource newsletter (*The Midden*); Two presentations at professional meetings;
 - Performance Measure O6
 - Performance Measure O10

Executive Committee Strategic Plan Values:

A. Sustainability:

This project will provide increased visitor appreciation of Upper and Lower Pictograph caves by constructing a viewing platform and installing interpretive signs. Currently visitors see nothing but a sign telling them to stay out. This project will stabilize the pictographs at the cave entrances, help visitors locate them, and provide information about them. In addition, this project will inventory numerous caves across White Pine County. The in-depth inventories will provide additional information that can be shared through interpretive signs and reports with those interested in entering the caves. The information gained through cave inventories will help protect the natural environment and sustain ecological health of the cave systems.

B. Connectivity.

This will largely be done via a wild cave simulation trailer which will help the public understand more about how to practice cave conservation and give a hands-on opportunity to experience wild caving. The cave simulation trailer will be hosted at Great Basin National Park, which sees over 150,000 visitors each year. In addition, this mobile exhibit can be taken to local schools to encourage the next generation to learn more about caves and cave conservation. The Park has already developed a Virtual Cave Tour for the tour route in Lehman Caves. The Park will conduct LiDAR scanning in the remote, wild parts of the cave to develop a Virtual Wild Cave Tour. There will be the opportunity to connect with tens of thousands of people via this medium. Connectivity will also be fostered by using the Park's social media channels on Facebook, Instagram, YouTube, and Twitter.

C. Community.

Visitors will be served by providing expanded outdoor recreation opportunities, particularly with the wild cave simulation trailer, wild cave tour, virtual wild cave tour, and the Upper and Lower Pictograph Cave portion of the project; fostering partnerships among the land management agencies as well as Nevada Department of Wildlife (NDOW), the National Speleological Society (NSS), the Northern Nevada Grotto (NNG), the Southern Nevada Grotto (SNG), and local tribes. Tribal input in this project will be large, with a tribal monitor assisting with cave surveys and an ethnographic assessment completed for caves of White Pine County.

Compliance with Departmental Priorities, Strategic Goal, Executive Orders (EO), or Secretarial Orders (SO).

In addition to the Departmental goals, the Forest Service portion of this project will meet the following U.S. Forest Service Priorities:

- a) **USDA Priority # 2. Being good neighbors and providing excellent customer service.**
 - a. This project will allow the USFS to be proactive in getting excellent information for their neighbors about the caves of White Pine County. Education and outreach about wild caves will help build bridges and provide excellent customer service.
- b) **USDA Priority #3. Promoting shared stewardship by increasing partnerships and volunteerism.**
 - a. Local cave groups (grottos) have committed to volunteer for this project (see letters of support). This will allow the USFS to develop better stewardship of resources and help with long-term care. This is an interagency proposal, so partnerships are key.
- c) **USDA Priority #4. Improving the condition of forests and grasslands.**
 - a. Through the information gained in this project, the USFS will be able to improve the condition of its resources under forest land by undertaking cave conservation projects like cave gating, improved education via signs and programs, cave cleanups, and more.
- d) **USDA Priority #5. Enhancing recreation opportunities, improving access, and sustain infrastructure.**
 - a. This project will allow caves suitable for recreational use to be identified,
- **Executive order #13855: Promoting Active Management of America's Forests, Range Lands to improve conditions and reduce wildfire risk.**
 - NA
 -
- **DOI Priority #1: Create a conservation stewardship legacy second only to Teddy Roosevelt.**
 - This project will help land management agencies in White Pine County to conserve wild caves, some of the most pristine landscapes because of difficult access and the long-term preservation that the cave environment provides. With

each agency knowing more about the resources they manage, they can provide better long-term conservation of these amazing resources.

- **DOI Priority #2: Sustainably develop our natural resources.**
 - NA
- **DOI Priority #3: Restore trust and be a good neighbor.**
 - The NPS and USFS will work closely with partners, volunteers, tribes, and the public on this project
- **DOI Priority #4: Ensure the tribal sovereignty means something.**
 - Tribal input in this project is a large component. An ethnographic assessment and ethnohistory is a primary deliverable. In addition, a tribal monitor will be part of the cave survey team.
- **DOI Priority #8: Modernize our infrastructure.**

Ineffective signs outside Upper and Lower Pictograph Caves will be replaced with protection measures and interpretive signs so that the public will enjoy improved recreation and access while better protecting cave and archeological resources.
- **DOI Priority #10: Achieve our goals and lead our team forward.**
 - This project will use experts to heighten our knowledge of caves in the most abundant cave area in the state. We will also have a state-of-the-art wild cave simulator, a new wild cave tour, and a virtual wild cave tour to help us lead forward.
- **SO No. 3347: Conservation Stewardship and Outdoor Recreation**
 - This project is consistent with overseeing Federal lands, particularly caves, for the benefit of current and future generations. Upon completion of this project, we will know what cave resources need to be conserved. We will also know what caves are most suitable for outdoor recreation opportunities. Increasing the protection and education measures at Upper and Lower Pictograph Caves will increase outdoor recreation opportunities. Development and implementation of a Wild Cave Tour at Great Basin National Park will allow for a new recreation opportunity. The Wild Cave Simulation Trailer will share the experience of crawling through a wild cave to hundreds of school kids and thousands of park visitors. A Virtual Wild Cave Tour will help people experience outdoor recreation in a new way, especially if they physically are not able to handle rough terrain. By using volunteers from local cave groups, the conservation stewardship will be increased greatly. These volunteers will have a long-term interest in the cave resources that they have helped to study and protect. In addition, they will be able to help others learn to recreate responsibly in caves.
- **SO No. 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes and Territories**

- This project will inform how to best enhance and expand public access for wild caving, a form of outdoor recreation. Through educational contacts and social media, it will also work to recruit and retain sportsmen and women conservations, while engaging youth, veterans, minorities, and underserved communities that traditionally have low participation in outdoor recreation activities. This project has a great deal of collaboration with tribes.
- **SO No. 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors**
 - NA
- **SO 3366: Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior**
 - This project will enhance recreational visits to Upper and Lower Pictograph Caves by developing infrastructure that helps Americans and visitors to the US understand the rock art present. The cave simulation trailer and public outreach about caves will help teach the public about how to recreate responsibly in wild caves while protecting the resources they harbor. A Wild Cave Tour at Lehman Caves will provide a new recreational opportunity to some park visitors, while a Virtual Wild Cave Tour will allow nearly anyone to experience the underground in a new way.
- **SO 3370 Improving Conservation Stewardship and Increasing Public Access to Urban National Wildlife Refuges**
 - N/A
- **SO 3372 Reducing Wildfire Risks on Department of the Interior Land Through Active Management**
 - N/A
- **SO 3374 Implementation of the John D. Dingell, Jr. Conservation, Management and Recreation Act**
 - NA
- **SO 3376 Increasing Recreational Opportunities through the use of Electric Bikes**
 - NA

Ranking Criteria:

Criteria #1: *The nomination supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability*

The project enhances habitats and protected areas. Specifically, caves are known to have unique environments, with high humidity and stable temperatures that allow for endemic species to live in them. New species to science have already been discovered in several caves, and this project has the potential to find new ones. It will also help land managers determine areas with higher diversity and a greater need for protection or further study. By knowing where potentially sensitive species (such as bats and cave invertebrates) live, managers can take proactive steps

to prevent listing, such as cave gating, public outreach, and cave cleanups. Cave cleanups will also help restore habitat for sensitive species. Air and soil temperature, relative humidity, water quality, and water quantity will all be measured as part of the cave inventories. This information will provide a baseline for climate change. Cave management is a central part of this project, as the inventory reports assist land managers by identifying sensitive areas and species as well as places that are appropriate for recreation.

Cultural resource management is fully integrated into this project. An archeologist and a tribal monitor will be part of the expert team conducting inventories in caves across the four mountain ranges. The ethnographic context and history for caves of White Pine County will be an important resource that provides a baseline for decades. The restoration of pictographs at Upper and Lower Pictograph Caves will protect rock art that is hundreds of years old. Hardening of the road adjacent to those caves will provide further protection.

Public health and safety are incorporated into this project by doing cave cleanups where needed and installing information/interpretive signs at selected cave entrances. Inventory reports will also address adverse impacts to resources caused by the volume of people using the cave and make suggestions on how to mitigate those adverse impacts. Social media will be used to share safe caving techniques and practices.

- **Criteria #2.** *The nomination promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support*

Protection of the rock art at Pictograph Caves directly conserves resources for future generations. This rock art will also be made more available for the public to understand through interpretive signs and a viewing area and will remain relevant and continue to provide a benefit for years. In addition, cave inventories will allow managers to know what cave resources they can protect for future generations, and the reports will recommend ways to protect the biological and cultural resources contained in these caves for the long-term.
- **Criteria #3.** *The nomination promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites*

This project will use education and outreach to encourage people to meaningfully connect with caves and help them appreciate and care for them. The wild cave simulation trailer will let people have a full-body experience to feel what it's like to move around in a cave. If they bump into cave formations or cave creatures, a buzzer goes off to let them know to be more careful. Interpretive signs, social media outreach, and school visits will also help to educate and engage people in understanding their role in protecting caves. The public will get training in how to do wild caves on the Wild Cave Tours that will be developed and implemented for a back section of Lehman Caves. Providing a Virtual Wild Cave Tour will allow even

more people to understand that cave environment, which will lead to forming stewards of it.

In-kind contribution of volunteers from the Northern Nevada Grotto (120 hours/year) and the Southern Nevada Grotto (300 hours/year) are included in this project, as well as staff time from Great Basin National Park.

This project preserves the past, particularly the pictographs at Upper and Lower Pictograph Caves, for present and future generations

- **Criteria #4. *The nomination promotes sustainability, connectivity, and community by connecting people to nature and recreational opportunities by uniting communities with important places across the landscape. The nomination enhances partnerships that promote cooperation and collaboration.***

This nomination is a multi-agency project with the USFS and NPS. The project also aims to involve NDOW and local tribes, as well as National Speleological Society groups, the Northern Nevada Grotto and the Southern Nevada Grotto. Volunteers from these caving clubs will help with inventories, cave cleanups, and other cave-related tasks. This stewardship component helps broaden support and reduces long-term costs. The use of a wild cave simulation trailer at schools with the use of a developed curriculum, [Project Underground](#), will help reduce human impact on caves by teaching people how to do best practices in caves, how to move smoothly, and why it's important to protect the creatures and features found in caves. People will be connected to nature and recreational opportunity via the new Wild Cave Tour at Lehman Caves and the Virtual Wild Cave Tour.

- **Criteria #5. *The nomination has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project***

In-kind contribution of volunteers from the Northern Nevada Grotto (120 hours/year) and the Southern Nevada Grotto (300 hours/year) are included in this project, as well as staff time from Great Basin National Park. The total value of the volunteer labor (at \$25.43/hr) is estimated at over \$32,000 for the three years that the project will be most active (years 2-3-4). Additional volunteer hours, although in a lesser extent, are expected in years 1 (set up) and 5 (close out). Great Basin National Park salaried employees contribution is expected to be more than \$58,000 over the 5-year project.
- **Criteria #6 *Advances the Agency/Entity Priorities. The proposed project specifically identifies what and how the nomination/project meets the priorities and strategic goals for their respective agency.***
 - Yes
- **Criteria #7. *Consistency with Executive (EO) and Secretarial Orders (SO). The proposed project specifically identifies what and how the nomination/project meets the EO and/or SOs.***
 - Yes

Map:

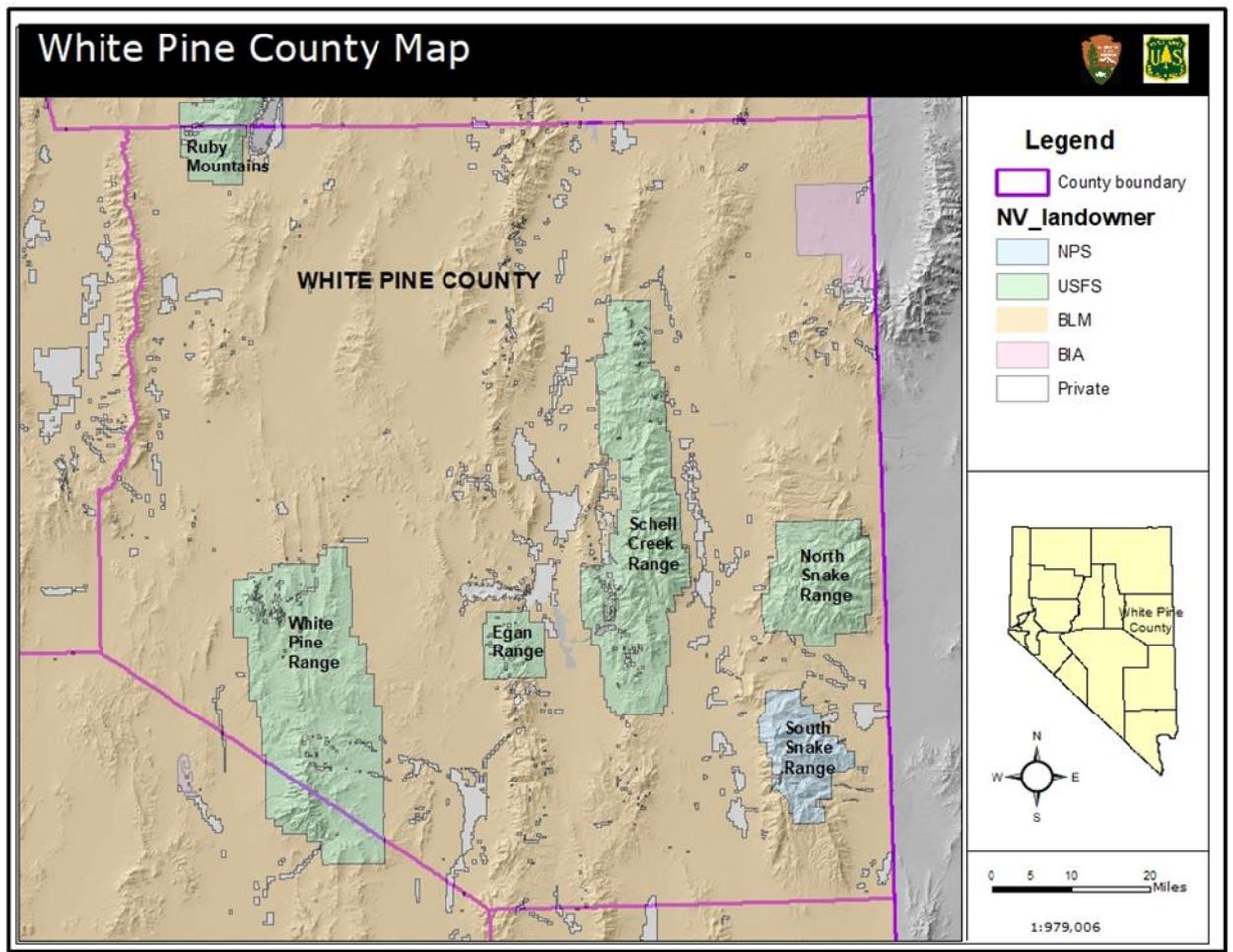


Figure 1 Project area is on National Park Service or National Forest System lands within White Pine County.

Photos:

None.

Letters of Support:

1. USDA Forest Service, Humboldt-Toiyabe National Forest, Ely Ranger District
2. Northern Nevada Grotto
3. Nevada Department of Wildlife

The remainder of the page intentionally left blank.



United States
Department of
Agriculture

Forest
Service

Humboldt-Toiyabe National Forest

Ely Ranger District
825 Avenue E
Ely, NV 89301
775-289-3031

File Code: 2880
Date: August 6, 2020

James Woolsey
Superintendent, Great Basin National Park
11 Great Basin National Park
Baker, Nevada 89311

Dear Superintendent Woolsey;

I am writing in support of Great Basin National Park's interagency SNPLMA Round 18 project, Protecting Wild Caves in White Pine County. The Ely Ranger District has consistently worked with Great Basin National Park, the Bureau of Land Management, and Nevada Department of Wildlife managing caves in White Pine County. Therefore, this effort only follows suit and is a real opportunity for all. This project will provide great benefit to the Humboldt-Toiyabe National Forest, as the majority of the Forest's caves are in White Pine County. Caves have long been an underappreciated unique resource that provides a storehouse of scientific information that is only beginning to be understood. We appreciate your efforts in spearheading this project. Protecting wild caves has great merit and the Ely Ranger District looks forward to participating and benefiting from the outcomes.

Sincerely,

A handwritten signature in black ink, appearing to read "Jose Noriega".

JOSE NORIEGA
District Ranger





**James Woolsey, Superintendent
Great Basin National Park
100 Great Basin National Park
Baker, NV 89311**

Dear Mr. Woolsey,

The Northern Nevada Grotto (NNG) of the National Speleological Society (NSS) actively supports the National Park Service proposal, *Protecting Wild Caves in White Pine County*. In addition, the NNG offers a minimum 120 volunteer hours per year for the entire five-year period of the project. We bring specialized expertise and can assist with cave surveying, resource inventorying, development and/or review of educational/interpretive materials, and cave clean-up/restoration. Among our members, we include **professional** geologists, hydrologists, surveyors, educators, and cave explorers. We also have dedicated cave enthusiasts who will anxiously provide “unskilled” labor under the direction of the agency representatives or more experienced cavers.

White Pine County, Nevada, contains a remarkable variety of caves and hold the potential of providing much important information about the geologic, climatic, anthropologic, and ecological history of the region. Yet, these caves are notably understudied. In the last three years, investigations by members of the National Speleological Society and our grotto have re-written the story of how (rising, deep-seated, sulfidic and carbon dioxide-rich waters) and when Lehman Caves formed (between 10 and 2 million years ago...likely 10-8 million years ago), providing intriguing insight into how many of the caves in White Pine County developed. This new understanding is very likely to inform our understanding of how valuable mineral deposits, particularly along the Carlin Trend, formed in the Great Basin.

Similarly, recent work by the park staff has shown that many surface species utilize caves. Further studying this relationship is important for developing a comprehensive understanding of the life cycle and lifestyle of the area’s animals. Better understanding the caves will enhance our understanding of the entire ecosystem of the region and assist land managers in science-based management of the caves under their stewardship.

Sincerely,

A handwritten signature in blue ink that reads "Louise D. Hose".

Louise D. Hose, PhD

President of the Northern Nevada Grotto



STATE OF NEVADA
DEPARTMENT OF WILDLIFE

6980 Sierra Center Parkway, Suite 120
Reno, Nevada 89511
Phone (775) 688-1500 • Fax (775) 688-1495

TONY WASLEY
Director

LIZ O'BRIEN
Deputy Director

JACK ROBB
Deputy Director

8 September 2020

James Woolsey, Superintendent
Great Basin National Park
100 Great Basin National Park
Baker, Nevada 89311

Dear Mr. Woolsey,

The Nevada Department of Wildlife would like to express our support for Great Basin National Park Service's SNPLMA Round 18 proposal "Protecting Wild Caves in White Pine County". NDOW is a strong proponent of using science-based conservation research projects to make informed land- and wildlife-management decisions. The management directives and the conservation efforts that would be provided from this important work would benefit Nevada's wildlife species that rely on caves, as well as provide protection and enjoyment of wild caves in White Pine County for many decades.

This proposed project is a collaborative effort between GBNP, USFS, NGOs and NDOW, and we look forward to partnering with GBNP on this project.

If you have any questions, please don't hesitate to contact me.

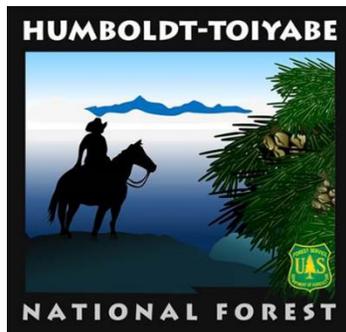
Sincerely,

A handwritten signature in black ink, appearing to read "Jason Williams".

Jason Williams
Wildlife Biologist
Nevada Department of Wildlife
1218 N. Alpha Street
Ely, NV 89301

Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

United States Department of Agriculture
Humboldt-Toiyabe National Forest
Spring Mountain National Recreation Area



Recreation and Environmental Alliance

Amount Requested \$1,856,542

Timeframe: 5 Years
Location: 38.287008° / -115.621736°
Congressional District NV-3 and NV-4

Project Manager: Deb MacNeil
Email address: Deborah.MacNeil@usda.gov
702-515-5448

Purpose Statement:

The USDA Forest Service, Spring Mountains National Recreation Area (SMNRA) will provide supplemental resources, education, and outreach to visitors in the SMNRA to address increased visitation, educate visitors and enforce SMNRA policies to reduce adverse impacts to cultural and natural resources to improve the long-term sustainability of the SMNRA.

Additionally, the SMNRA will work with partners, the local community, tribal governments, and the public to assess the current fee structure for developed and dispersed areas to determine if systemic changes are needed to support the increased visitation

Background info to support the need:

This project will provide for the immediate education and outreach for visitors and provide a long-term solution to ensure current and future generations can enjoy the world-class, irreplaceable resources of the SMNRA. Many visitors are new users to the Forest who have not received training in safe recreation, fire prevention, and leave-no-trace concepts.

Implementation of this project will provide for safe and enjoyable recreation on the SMNRA while protecting unique endangered and endemic species, sensitive ecosystems, cultural legacy, and untrammeled places.

The Spring Mountains National Recreation Area (SMNRA) has experienced significant increases in year-round recreational usage, in part due to its proximity to Las Vegas and easy state highway access. The SMNRA's unique resources, coupled with S. Nevada's population and visitor growth, require short and long-term solutions.

With 2.2 million residents and over 42 million annual visitors in Southern Nevada, there is a growing, critical need to address the sustainability of the SMNRA. As Southern Nevada's only winter recreation destination, including a ski resort, the recreation demand continues to grow with the population. When the snow flies, we frequently experience more than 50,000 visitors per day just within the Kyle and Lee Canyon Areas. During the summer, the SMNRA provides a welcome escape from the desert heat, with temperatures 30 degrees cooler than the valley floor. In the spring, visitors seek the unique flora and fauna, and in the fall, they treasure the changing autumn colors.

Many of our visitors are new users to the forest who have not yet received training in safe recreation, fire prevention, and leave-no-trace concepts. This project will address the challenges posed by increased visitation through both short and long-term mechanisms, to include: supplemental resources to address the surge periods of visitation, including education, outreach, and where necessary, enforcement; partnership with local communities, tribal governments, state and county agencies, and the public to assess the current fee structure for developed and dispersed areas to determine if systemic changes are needed; and implementation of the recommendations to improve the long-term sustainability of the SMNRA.

The project provides education and outreach for visitors and develops and implements a plan for the long-term sustainability of resources. These efforts will help ensure enjoyment for current and future generations. Some of the specific challenges this project will address include:

- Increased vandalism and graffiti, adversely impacting, cultural sites, natural resources, adjacent private properties, and Forest Service facilities.
- Unauthorized non-motorized and motorized usage, potentially impacting natural and cultural resources, including sensitive, threatened, and endangered species.
- Excessive litter requiring large crews to conduct cleanups.
- Illegal campfires which can lead to wildfires, unnecessarily increasing the risk to people, resources, and private property.
- Out-of-date and inconsistent fee structure, which adversely impacts recreational users' experiences, cultural and natural resources, and our neighbors.

New visitors, untrained in responsible recreation, adversely effects the recreational experiences for the community and other visitors.

Relationship to prior approved phases or related SNPLA projects and description of anticipated phases:

There are no anticipated future phases of this Project.

Deliverables:

- Primary deliverables
 - Hire a term Project Manager to coordinate with volunteer groups and organizations to accomplish outreach and education events and develop a sustainable plan. Volunteer events will include cleanup efforts, graffiti removal, sustainable principals, educational events, and preparation and dispersal of educational materials
 - Hire two or more term forest protection, education, prevention, and/or outreach positions. These positions will assist with outreach and education to reduce the adverse impacts occurring on the SMNRA. Additionally, employees with appropriate training may also enforce forest policies when education and outreach are not successful. This will help reduce illegal and unsafe behavior.
 - Fund overtime and travel for Law Enforcement, Forest Protection, and Fire Prevention Officers to provide additional support during holiday and other peak use periods. The base hours for these personnel will be covered using appropriated dollars.
 - Work with key partners, such as federal, state, county, and tribal governments, non-profit partners, community members, visitors, and the public to develop and begin to implement a long-term plan to sustainably fund and address these challenges. This plan may include entrance or use fees, actions to manage traffic/parking, and other options identified outreach with visitors and partners.

- Anticipated deliverables
 - None
- Standard deliverables
 - Coordination and meetings to develop plan
 - SNPLMA close-out and reports

Project Timeframe:

The Project Lead will coordinate the overall implementation of the project, track accomplishments and report out on those accomplishments.

Year 1

- Recruit and fill the term Project Lead position
- Recruit and fill the term forest protection, education, prevention, and/or outreach positions
- Begin training for the forest protection, education, prevention, and/or outreach positions, if needed
- Prepare news releases and announcements notifying the public about the Project
- Coordinate with key partners on the Project
- Additional Law Enforcement, Forest Protection, and/or Fire Prevention Officers resources during high use periods.

Year 2

- Team Leader organizes volunteer events/efforts in coordination with partners
- Begin planning with partners on the long-term plan
- Additional Law Enforcement, Forest Protection, and/or Fire Prevention Officers during high use period.
- Ongoing Law Enforcement, Forest Protection, and/or Fire Prevention Officers implement prevention, educational, mitigation and enforcement activities
- Ongoing public outreach and education

Year 3

- Team Leader organizes volunteer events/efforts in coordination with partners
- Continue planning with Partners on the long-term plan
- Additional Law Enforcement resources during high use periods
- Ongoing Law Enforcement resources implement prevention, educational and enforcement activities
- Ongoing public outreach and education

Year 4

- Team Leader organizes volunteer events/efforts in coordination with partners
- Continue planning with Partners on the long-term plan
- Complete the long-term plan, present plan to FS for approval, and begin implementing actions items

- Bring in additional Law Enforcement, Forest Protection, and/or Fire Prevention Officers during high use periods
- Ongoing Law Enforcement, Forest Protection, and/or Fire Prevention Officers implement prevention, educational, mitigation, and enforcement activities
- Ongoing public outreach and education

Year 5

- Team Leader organizes volunteer events/efforts in coordination with partners
- Continue long-term plan implementation
- Bring in additional Law Enforcement, Forest Protection, and/or Fire Prevention Officers during high use periods
- Ongoing Law Enforcement, Forest Protection, and/or Fire Prevention Officers implement prevention, educational and enforcement activities
- Ongoing public outreach and education
- Final accomplishments/close-out reports completed, and the public news releases prepared/published

Level of Readiness for Implementation

Upon receiving funds, the SMNRA will immediately begin implementation of the project. Hiring of term positions will be critical to the success of the project in the first year. For the term forest protection, education, prevention, and/or outreach positions, some initial training may be required.

Future Operations and Maintenance:

Not addressed.

Partnerships and/or contributed funds:

No contributed funds or in-kind-services identified. In-kind contributions may include:

- This project will involve at least one cooperative agreements. Under a cooperative agreement, the partner provides a 25% match which is typically covered by volunteer labor or overhead costs contributed.
- The exact amount of the contributed funds is currently not known and will be determined as the cooperative agreement(s) are developed.

This project will involve volunteers throughout the process. The number of volunteers and estimated value of volunteer time is not currently known.

The SMNRA will focus on increasing partnerships and volunteerism. The Team Lead position will provide a dedicated contact for partners and volunteer organizations to improve management on the SMNRA as well as other adjacent Federal Lands. This project will increase the capacity to utilize partnerships and volunteers in the management of the SMNRA.

Funding Summary and Budget Detail:

ROUND 18		
CONSERVATION INITIATIVES NOMINATION		
ESTIMATED DIRECT COSTS & KEY MILESTONES		
Project Name: SMNRA Recreation and Environmental Alliance	Date prepared:	9/13/2020
	Agency:	Forest Service
Project #	Priority #:	
Prepared by: Deb MacNeill	Phone #:	702-515-5448
Title/position: Area Manager		
1 Planning & Environmental Documentation		
	\$0	0.00%
Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)		
2 FWS Consultation - Endangered Species Act		
	\$32,400	1.75%
Direct expenses or FWS consultation, if required.		
3 Direct Federal Labor to Implement Project (Payroll)		
	\$1,289,400	69.45%
For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.		
4 Project Equipment and/or Supplies and Materials		
	\$70,000	3.77%
Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.		
5 Travel and Per Diem for Implementation		
	\$56,100	3.02%
Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below		
6 Official Vehicle Use (vehicles with Federal license only)		
	\$100,000	5.39%
Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost		
7 Training (required to implement the project)		
	\$24,000	1.29%
Includes training essential/necessary for implementation of the project.		
8 Contracts, Grants, and/or Agreements		
	\$115,000	6.19%
CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan.		
9 Other Necessary Expenses		
	\$169,642	9.14%
(See Appendix B-11)		
Total requested/estimated budget		
	\$1,856,542	100.00%
10 Estimated agency or partner contribution		
	\$0	
Total Estimated project value		
	\$1,856,542	

Performance Measures:

Output of Primary Deliverable 1. The SMNRA will hire a term Project Manager to coordinate with volunteer groups and organizations to accomplish outreach and education events and develop a sustainable plan. Volunteer events will include cleanup efforts, graffiti removal, sustainable principals, educational events, and preparation and dispersal of educational materials. The SNPLMA Performance Measures include:

- Performance Measure C1 - Cultural or Historic Sites or Structures Stabilized or Protected.
- Performance Measure C2 - Cultural or Paleontological Artifacts Protected.
- Performance Measure O5 - Outreach Contacts Made.
- Performance Measure O6 - New Interpretive or Education Publications/Signs/ Kiosks/Displays/etc. Produced.
- Performance Measure O7 - Interpretive or Education Presentations Given and/or Community Events Participated in or Hosted.
- Performance Measure O10 – Volunteers Used

Output of Primary Deliverable 2: The SMNRA will hire two or more term forest protection, education, prevention, and/or outreach positions. These positions will assist with outreach and education to reduce the adverse impacts occurring on the SMNRA. Additionally, employees with appropriate training may also enforce forest policies when education and outreach are not successful. This will help reduce illegal and unsafe behavior. The SNPLMA Performance Measures include:

- Performance Measure O3 - Law Enforcement Patrols, Incident Reports, and Investigations
- Performance Measure C2 - Cultural or Paleontological Artifacts Protected
- Performance Measure C3 - Cultural / Paleontological Resources Surveyed, Inventoried or Monitored
- Performance Measure O5 - Outreach Contacts Made
- Performance Measure O7 - Interpretive or Education Presentations Given and/or Community Events Participated in or Hosted

Output of Primary Deliverable 3: The SMNRA will utilize funding for overtime and travel for Law Enforcement, Forest Protection, and Fire Prevention Officers to provide additional support during holiday and other peak use periods. The base hours for these personnel will be covered using appropriated dollars. The SNPLMA Performance Measures include:

- Performance Measure O3 - Law Enforcement Patrols, Incident Reports, and Investigations
- Performance Measure C2 - Cultural or Paleontological Artifacts Protected
- Performance Measure C3 - Cultural / Paleontological Resources Surveyed, Inventoried or Monitored
- Performance Measure O5 - Outreach Contacts Made
- Performance Measure O7 - Interpretive or Education Presentations Given and/or Community Events Participated in or Hosted

Output of Primary Deliverable 4: The project will allow the SMNRA to work with key partners, such as federal, state, county, and tribal governments, non-profit partners, community members, visitors, and the public to develop and begin to implement a long-term plan to sustainably fund and address these challenges. This plan may include entrance or use fees, actions to manage traffic/parking, and other options identified outreach with visitors and partners. The SNPLMA Performance Measures include:

- Performance Measure O5 - Outreach Contacts Made.
- Performance Measure O12 – Management Plans/Handbooks/Manuals/ Guides for Activity on Public Lands Completed

Executive Committee Strategic Plan Values

Sustainability: The project will conserve resources to ensure availability to future generation through management of natural and/or cultural resources for current public benefit and sustainable social and economic utilization.

- This project will protect and conserve natural and cultural resources through improved management of significant recreational uses on the SMNRA.
- This project will use a balanced approach through education, prevention, enforcement, and mitigation.
- This project will work with all partners to develop a long-term plan to fund and manage the significant recreational uses and impacts that are occurring.
- This project will protect and conserve natural and cultural resources through improved management of significant recreational uses on the SMNRA.
- This project will use a balanced approach through education, prevention, enforcement, and mitigation.
- This project will work with all partners to develop a long-term plan to fund and manage the significant recreational uses and impacts that are occurring.
- This project will help educate the public about the impacts of recreational uses and their actions on natural and cultural resources.
- This project will have long term benefits through the development of a plan with all partners which will improve management of recreational uses and identify funding measures to ensure appropriate management of those uses far into the future.

Connectivity. The project will encourage people to meaningfully connect with the natural environment and help appreciate and care for the environment by providing information and resources to educate and engage people in understanding their role in protection and maintaining the natural environment by providing opportunities for them to connect to the natural resources directly or virtually, or provides education of the environment

- The project will use a balanced approach through education, prevention, enforcement and mitigation.
- The project will help educate the public about the impacts of recreational uses and their actions on natural and cultural resources.
- The project will have long term benefits through the development of a plan with all partners which will improve management of recreational uses and identify funding measures to ensure appropriate management of those uses far into the future.

- a. The project will create volunteer opportunities for the public to participate and address the impacts resulting from excessive recreational uses.

Community. The project will encourage the community to be engaged and become a partner in the management of the natural resources

- The project meets the needs of multiple State Agencies including Nevada Highway Patrol, Nevada Department of Wildlife, Nevada Division of Forestry, and the State Historic Preservation Office
 - The project meets the needs of Clark County, Metro, and local Governments
 - The project involves non-Federal, public partners, citizen groups or organizations in the development and accomplishment of resource management goals and other activities to prevent waste, damage, or neglect
 - This project involves multiple non-profit groups to address the impacts of recreational use on the SMNRA
 - The project includes a stewardship component (Federal or non-Federal) to broaden support and reduce long-term costs by minimizing the human impact on the environment through an education plan with clear curricula and achievable goals and objectives
 - This SMNRA will use a balanced approach through education, prevention, enforcement, and mitigation
 - The SMNRA will utilize volunteers and partners to address the impacts that have occurred to Natural resources as well as historical and cultural site.
- b. The SMNRA will work with all partners to develop a long-term plan to fund and manage the significant recreational uses and impacts that are occurring

Compliance with Departmental Priorities, Strategic Goal, Executive Orders (EO), or Secretarial Orders (SO):

The implementing agency is the USDA Forest Service and the project satisfies/meets the following Forest Service Priorities:

- a) Uplifting and empowering our employees through a respectful, safe working environment.
 - This project will improve employee morale on the SMNRA by improving safety and better addressing the challenging issues that current employees have to face.
- b) Being good neighbors and providing excellent customer service.
 - This project will involve extensive coordination and planning with all affected and interested partners.
 - The Team Lead position will provide a dedicated contact for partners and volunteer organizations to improve management on the SMNRA as well as other adjacent Federal Lands.
- c) Promoting shared stewardship by increasing partnerships and volunteerism.
 - The Team Lead position will provide a dedicated contact for partners and volunteer organizations to improve management on the SMNRA as well as other adjacent Federal Lands.
 - This project will increase the capacity to utilize partnerships and volunteers in the management of the SMNRA.

- d) Improving the condition of forests and grasslands.
 - This project will increase capacity to protect important natural and cultural resources on the SMNRA.
 - This project will improve capacity to implement prevention, education and enforcement actions to reduce and prevent human caused wildfires and the associated impacts.
 - This project will also provide the capacity to restore and mitigate the impacts resulting from significant recreation use.
 - This project will work with partners to complete a long-term plan to improve management of recreational uses.
- e) Enhancing recreation opportunities, improving access, and sustain infrastructure.
 - This project will improve recreational opportunities through the education and interpretation opportunities.
 - This project will provide capacity to restore and mitigate the impacts resulting from significant recreation use.
 - This SMNRA will work with partners to complete a long-term plan to improve management of recreational uses.
- **Executive order #13855: Promoting Active Management of America's Forests, Range Lands to improve conditions and reduce wildfire risk.**
 - The project will improve capacity to implement prevention, education and enforcement actions to reduce and prevent human caused wildfires and the associated impacts.
- **DOI Priority #1: Create a conservation stewardship legacy second only to Teddy Roosevelt.**
 - This Project will improve recreational opportunities through the education and interpretation opportunities.
 - This project will also provide the capacity to restore and mitigate the impacts resulting from significant recreation use.
 - This project will work with partners to complete a long-term plan to improve management of recreational uses.
 - This project will increase capacity to protect important natural and cultural resources on the SMNRA.
 - This project will improve capacity to implement prevention, education and enforcement actions to reduce and prevent human caused wildfires and the associated impacts.
 - This project will work with partners to complete a long-term plan to improve management of recreational uses.
- **DOI Priority #2: Sustainably develop our natural resources.**
 - NA
- **SO No. 3347: Conservation Stewardship and Outdoor Recreation**
 - Dot directly stated

- **SO No. 3356: *Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes and Territories***
 - NA
- **SO No. 3362: *Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors***
 - The project will increase capacity to protect important natural resources, including big game habitats on the SMNRA. This area provides habitats for Mule Deer, Elk, and Desert Bighorn Sheep.
 - The project will improve capacity to implement prevention, education and enforcement actions to reduce and prevent human caused wildfires and the associated impacts on big game habitats.
- **SO 3366: *Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior***
 - The Project will improve recreational opportunities through the education and interpretation opportunities that will benefit all federal lands in the area.
- **SO 3370 *Improving Conservation Stewardship and Increasing Public Access to Urban National Wildlife Refuges***
 - NA
- **SO 3372 *Reducing Wildfire Risks on Department of the Interior Land Through Active Management***
 - The project will improve capacity to implement prevention, education and enforcement actions to reduce and prevent human caused wildfires and the associated impacts.
- **SO 3374 *Implementation of the John D. Dingell, Jr. Conservation, Management and Recreation Act***
 - NA
- **SO 3376 *Increasing Recreational Opportunities through the use of Electric Bikes***
 - NA

Ranking Criteria:

Criteria #1: *The nomination supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability*

- Habitat Enhancement
 - Protects and conserve important wildlife habitats by increasing capacity for public education, prevention and enforcement associated with significant recreational uses, pressures, and adverse impacts.
 - Benefits habitats for big game species, sensitive/threatened/endangered species, as well as other wildlife species
- Cultural Resources

- Increased protections for cultural resources.
- Increased capacity to utilize volunteers and partners.
- Public Health and Safety
 - Increased capacity to clean up and prevent litter and dumps.
 - Mitigates adverse impacts to resources caused by the volume of people using the resource.
 - Resolves trespass/encroachment/illegal use of public lands.
 - Increase the law enforcement presence improves public safety.
 - Reduces human caused fires through education, prevention, and enforcement.

Criteria #2. *The nomination promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support*

- Conserves resources to ensure availability to future generation
 - Protects and conserves natural and cultural resources through improved management of significant recreational uses on the SMNRA.
 - Uses a balanced approach through education, prevention, enforcement, and mitigation.
 - Works with all partners to develop a long-term plan to fund and manage the significant recreational uses and impacts that are occurring.
- Conserves or restores functionality, resilience, and integrity of biological communities and/or cultural resources.
 - Protects and conserve natural and cultural resources through improved management of significant recreational uses on the SMNRA.
 - Uses education, prevention, enforcement, and mitigation.
 - Work with partners to develop a long-term plan to fund and manage the significant recreational uses and impacts that are occurring.
- Will remain relevant and continue to provide a benefit
 - Educate the public about the impacts of recreational uses and their actions on natural and cultural resources.
 - Long term benefits through the development of a plan to improve management of recreational uses and identify funding

Criteria #3. *The nomination promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites*

- Encourages people to meaningfully connect with their natural environment.
 - Utilize education, prevention, enforcement, and mitigation.
 - Educates the public about the impacts of recreational uses and their impacts on natural and cultural resources.
 - The project will have long term benefits through the development of a plan to improve management of recreational uses and identify potential funding measures/sources.
 - Creates volunteer opportunities for the public to participate.
- Committed non-SNPLMA sources of funding or in-kind contribution.
 - The project may involve multiple cooperative agreements. Under these cooperative agreements the partners will provide a 25% match which is

typically covered by volunteer labor or overhead costs contributed. The exact amount of the contributed funds is currently not known and will be determined as the cooperative agreements are developed.

- The project involves volunteers throughout the process. The number of volunteers and estimated value of volunteer time is not currently known.
- Preserves the past (cultural or historic sites)
 - Protect and conserve cultural resources through improved management of significant recreational uses on the SMNRA.
 - Education, prevention, enforcement, and mitigation.
 - Utilize volunteers and partners to address the impacts in and near historical and cultural sites.
 - Work with partners to develop a long-term plan to fund and manage the significant recreational uses.

Criteria #4. *The nomination promotes sustainability, connectivity, and community by connecting people to nature and recreational opportunities by uniting communities with important places across the landscape. The nomination enhances partnerships to promote cooperation and collaboration.*

- The project addresses and meets the needs of more than one agency (federal or state)

Criteria #5. *The nomination has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project*

- In-kind contributions may include:
 - The project will involve at least one cooperative agreements. Under a cooperative agreement, the partner provides a 25% match which is typically covered by volunteer labor or overhead costs contributed.
 - The exact amount of the contributed funds is currently not known and will be determined as the cooperative agreement(s) are developed.
 - This project will also involve volunteers throughout the process. The number of volunteers and estimated value of volunteer time is not currently known.

- **Criteria #6** *Advances the Agency/Entity Priorities. The proposed project specifically identifies what and how the nomination/project meets the priorities and strategic goals for their respective agency.*

- Yes

●

- **Criteria #7.** *Consistency with Executive (EO) and Secretarial Orders (SO). The proposed project specifically identifies what and how the nomination/project meets the EO and/or SOs.*

- Yes

Maps

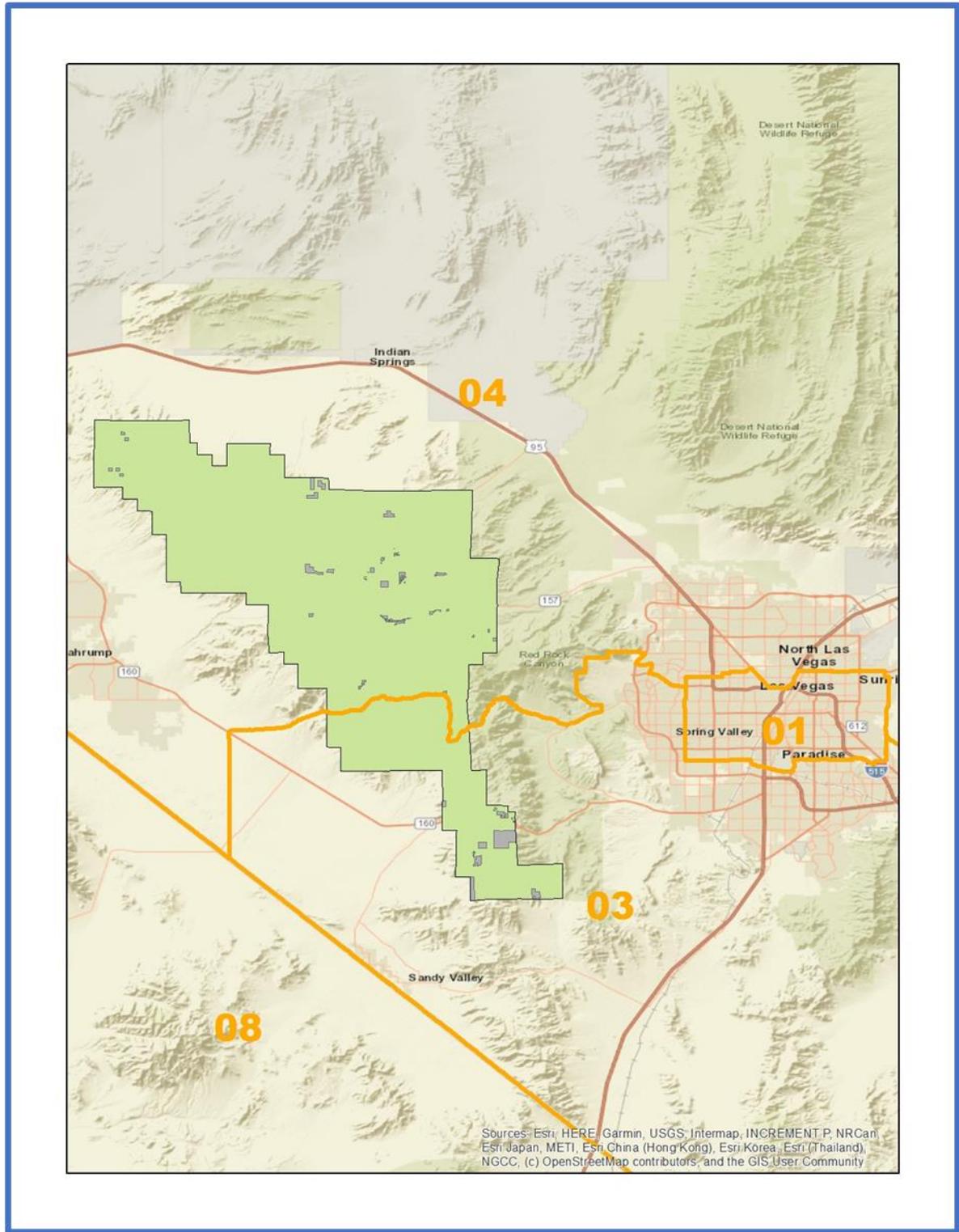


Figure 1 Project Area - Spring Mountain National Recreation Area, SMNRA

Photos

Figure 2 Winter litter gathered by volunteers and awaiting pickup.



Figure 3 Significant graffiti requiring cleanup.

Letters of Support:

None.

Southern Nevada Public Land Management Act
Conservation Initiatives
Round 18

United States Department of the Interior
U.S. Fish and Wildlife Service
Moapa Valley National Wildlife Refuge



**Moapa Valley National Wildlife Refuge Riparian
Restoration**

Amount Requested: \$737,080

Congressional District: NV-4
Timeframe: 5 Years
Location: 36.712779 / -114.718745

Federal Manager: Kevin DesRoberts, Project Leader

Contact: David Stone
Wildlife Refuge Specialist
Pahranagat and Moapa Valley National Wildlife Refuges
U.S. Fish and Wildlife Service
P: (775) 725-3417
Email: david_stone@fws.gov

Purpose Statement:

The U.S. Fish and Wildlife Service (USFWS) requests approval of funds to restore riparian habitat at Moapa Valley National Wildlife Refuge (Moapa Valley NWR, refuge) in Clark County, Nevada, with the intent to restore approximately twenty-five acres of mesquite bosque and upland shrub habitats through non-native plant removal and establishment of native plants. This project will aid the recovery of the federally endangered Moapa dace and benefit other aquatic and terrestrial wildlife species.

Background info to support the need:

Moapa Valley NWR was established in 1979 to protect the endangered Moapa dace. The refuge was opened to the public in 2009 after important restoration and installation of visitor facilities was accomplished to allow for safe public access. About 75% of the restoration and visitor facilities since 2004 have been funded by the Southern Nevada Public Land Management Act (SNPLMA). Without this funding, the refuge could not have built visitor facilities nor have opened to the public.

Most importantly, the restoration has directly benefited native wildlife and the endangered Moapa dace, whose population has steadily increased over the past decade. In 2008, the population was only about 400 individuals. The most recent population survey estimated 2,342 dace, which is likely the result of habitat restoration on and off the refuge. Past restoration efforts focused primarily on the aquatic and riparian areas of the refuge to directly benefit the Moapa dace: restoring the natural spring channels (e.g., removing resort structures such as swimming pools), removing non-native palm trees in and near the streams, and planting native aquatic and riparian vegetation.

Palm tree removal is particularly important for the sustainable management of the refuge and the Moapa dace. Most of the current habitat management on the refuge is focused on removing palms at all life stages (seedlings, mid-sized and mature trees), reducing fire risk by trimming tree skirts and removing fallen debris, and targeting our tree removal efforts at trees that are consuming precious water resources in the small streams that occur on the refuge.

This nomination is designed to focus on the riparian habitat that borders streams at Moapa Valley NWR. Over many decades of habitat deterioration in the Moapa Valley, most of the once prevalent mesquite bosques are now gone. Only remnant patches of mesquite bosque are seen in the Moapa Valley. Our major focus is now placed on maintaining and restoring mesquite bosques to southern Nevada as outlined in the Desert National Wildlife Refuge Complex Comprehensive Conservation Plan and in the Nevada State Comprehensive Wildlife Conservation Strategy. Mesquite bosques are important habitats for 65 bird species including phainopepla (*Phainopepla nitens*), a species of concern; and Lucy's warbler (*Oreothlypis luciae*), a species of continental importance. In addition to birds, the California Leaf-nosed bat (*Macrotus californicus*), a species of special concern, also depends on mesquite bosques for foraging in this part of their range. Riparian restoration will enhance habitat connectivity for these and other terrestrial and aquatic species, including several endemic species that occur nowhere else on Earth.

Riparian restoration at Moapa Valley NWR will reestablish natural stream buffers, resulting in a more stable stream ecosystem, and improved water quality, which is a major factor in Moapa dace reproduction and survival. Currently, large sediment loads are washed into the aquatic system during every major rainfall event due to the lack of adequate riparian buffer along the streams. Sediment loads reduce water quality for all the sensitive species present and spring snail studies indicate populations are declining because of poor water quality. In addition to spring snails, numerous other aquatic endemic species including the Moapa white river springfish (*Crenichthys baileyi moapae*), Moapa riffle beetle (*Microcylloepus moapus*), Moapa Warm Springs riffle beetle (*Stenelmis moapa*), and Warm Springs naucorid (*Usingerina moapensis*) will benefit from the project through improving water quality and connecting patches of suitable habitat..

Riparian restoration will target approximately 25 acres of mesquite bosque and shrub habitat through non-native plant removal and planting of native vegetation. Native plantings will occur in areas previously disturbed or in areas affected by non-native palm tree removal. While several hundred mature palm trees have already been removed from the refuge, many hundreds of palm trees in all life stages remain along the streams' riparian areas.

The goal is to reduce the number of palm trees to a level that decreases the potential for catastrophic wildfire. Not only will this project mitigate wildfire risk, but it will improve sustainability by conserving water for native fish and wildlife species, as well as people in the community that rely on the Muddy River system for drinking water and irrigation. It is estimated that a single palm tree can use 1,000 liters of water per day. Palm trees are also difficult and expensive to manage because skirts must be trimmed or removed to reduce the potential for fire (see Attachment 3 for photos). In addition, they are prolific seed producers and readily sprout wherever seeds are deposited. Some palm trees will remain in the visitor area of the refuge for historical values and stakeholder acceptance. The introduction of the non-native palm trees can be traced to the 1880s, and some members of the local community have expressed a desire for palms to remain. These trees will be kept trimmed for safety and all seedlings eradicated each year.

Relationship to prior approved phases or related SNPLMA projects and anticipated future phases:

This project will build on or emulate past successes at Moapa Valley NWR in habitat restoration and visitor area improvements, approximately 75% of which was funded in the past by the Southern Nevada Public Land Management Act. Deliverable 1 of this nomination is designed to shift emphasis beyond the stream areas and restore mesquite bosque and upland shrub habitat through non-native plant removal and planting of native vegetation. Past successful SNPLMA projects that this project will build on for habitat restoration and visitor facility improvements include 4-3: Moapa Dace Viewing Chamber (FW08), 4-12: Habitat Restoration (FW09), and 5-11: Habitat Restoration Project, Phase 2 (FW20). There is one ongoing SNPLMA project at Moapa Valley NWR, Spring Stewardship and Restoration in Southern Nevada (FW-86).

Deliverables:Primary Deliverables:

- (1) Restoration of mesquite bosque and shrub habitats, including:
 - a. Removal of at least 150 non-native palm trees to allow native vegetation to re-establish and reduce potential for fire. Final total removed trees depends on site conditions and proximity to streams, facilities, etc.
 - b. Trimming of approximately 25 palm trees to minimize potential for fire. Some palm trees will be left in place in the visitor area to retain historical values. Final total trimmed tree depends on site conditions and proximity to streams, facilities, etc.
 - c. Restoration across approximately 25 acres of riparian habitat by planting at least 700 native trees, shrubs and forbs at varying densities. Areas to be planted include existing areas where past infrastructure was removed and location remains disturbed, as well as in areas where non-native palm trees will be removed. Native seed or cuttings will be collected onsite and grown out at a nursery.
 - d. Installation of temporary irrigation, where needed, or installation of other water-saving methods (e.g., mulch, watering rings, etc.) in various locations across about 25 acres of riparian native plantings to increase survivorship of native plants in initial years.

Anticipated Deliverables:

- None.

Standard Deliverables:

- Contract and budget management by agency personnel, including but not limited to developing scopes of work, writing bid requests, reviewing proposals/bids, providing technical representation for Contracting Officer, reviewing and approving invoices, and compiling budget information throughout project duration.
- Project management by temporary cooperator or temporary personnel with restoration specialty to oversee or implement project activities and deliverables (particularly restoration), conduct appropriate reviews throughout different stages of deliverables, coordinate with other agency personnel or contractors, and ensure sufficient progress throughout the duration of the project. Project Manager/Restoration Specialist will work full time on restoration efforts for four years.
- Environmental permitting by agency personnel when applicable, such as National Environmental Policy Act, Section 106 of the National Historic Preservation Act, section 7 of the Endangered Species Act, etc.

Deliverable	Year 1	Year 2	Year 3	Year 4	Year 5
(1) a. and (1) b. Habitat Restoration-remove and trim palm trees	Planning	Implementation			Final Documentation and Closeout
(1) c. and (1) d. Habitat Restoration -- revegetate ~25 acres with ~700 plants; install irrigation	Planning, including collections and grow out	Planning, including collections and grow out	Installation	Installation	Final Documentation and Closeout
(2) Contract management	Throughout project duration.				
(3) Environmental permitting	NEPA, Section 106, and ESA				
(4) Project management	Throughout project duration.				

Project Timeframe:

Year 1:

- Identify habitat restoration zones and critical invasive palm trees to be removed.
- Meet with partnering USFWS Ecological Services to conduct needed NEPA, Sec. 7, and other required permits.
- Identify and collect seed sources for native mesquite bosque community restoration.
- Develop contract with National Park Service's Song Dog Nursery to propagate restoration plants.
- Plan and design decorative gates, fence, and interpretive welcome sign for the visitor entrance gateway.

Year 2:

- Construction and removal of identified invasive palm trees removed.
- Trimming left palms around the visitor parking area to remove potential hazards from falling debris.
- Identify and collect seed sources for native mesquite bosque community restoration.
- Deliver seed sources to National Park Service's Song Dog Nursery to propagate restoration plants.
- Construction and installation of decorative gates, fence, and interpretive welcome sign for the visitor entrance gateway.

Year 3:

- Construction and removal of final identified invasive palm trees to be removed.
- Trimming left palms around the visitor parking area to remove potential hazards from falling debris.
- Restoration of native mesquite bosque community restoration along streams of previously disturbed sites where invasive species were removed.
- Deliver seed sources to National Park Service's Song Dog Nursery to propagate restoration plants.
- Install temporary irrigation system for recently established restoration efforts.
- Operation of irrigation system.

Year 4:

- Construction and removal of final identified invasive palm trees to be removed.
- Trimming left palms around the visitor parking area to remove potential hazards from falling debris.
- Restoration of native mesquite bosque community restoration along streams of previously disturbed sites where invasive species were removed.
- Complete additional mesquite bosque riparian restoration efforts.
- Install temporary irrigation system for recently established restoration efforts.
- Operation of irrigation system.
- Evaluate previously planted restoration zones.

Year 5:

- Trimming left palms around the visitor parking area to remove potential hazards from falling debris.
- Evaluate previous planted restoration zones.
- Remove irrigation system from successful restoration zones.
- Operation of irrigation system on remaining recently planted restoration zones.
- Closeout project.

Level of Project Readiness for Implementation:

The U.S. Fish and Wildlife Service at Moapa Valley NWR is ready to initiate implementation of this project as soon as it receives notification of funds availability. The USFWS currently has one project ongoing and has completed and closed out numerous SNPLMA projects at Moapa Valley NWR.

Future Operations and Maintenance:

By removing non-native palms and establishing native vegetation, long-term maintenance costs will be reduced, such as trimming the palm trees, removing palm frond debris, and controlling palm seedlings.

Partnerships and/or contributed funds:

An estimated \$151,050.00 in contributed funds is projected. This total figure includes USFWS personnel (Fish and Wildlife Biologist, Agency Administration, and Equipment Operator) charging to base agency funding. In addition to the base salaries charged, refuge equipment and volunteers will be used on the project.

Funding Summary:

ROUND 18			
CONSERVATION INITIATIVES NOMINATION			
ESTIMATED DIRECT COSTS & KEY MILESTONES			
Project Name:	Riparian Restoration	Date prepared:	9/14/2020
		Agency:	
Project #		Priority #:	
Prepared by:		Phone #:	
Title/position:			
1 Planning & Environmental Documentation		\$0	0.00%
Includes labor for surveys/reports for cultural, natural, biological, archaeological, historical resources, etc. and preparation of NEPA documentation and the decision document. Does not include on-going compliance monitoring (see Direct Labor #3)			
2 FWS Consultation - Endangered Species Act		\$0	0.00%
Direct expenses or FWS consultation, if required.			
3 Direct Federal Labor to Implement Project (Payroll)		\$368,750	50.03%
For interagency projects, identify a primary team lead and the lead agency for consultation/coordination and individual agency leads responsible for entering progress and reports into SMART.			
4 Project Equipment and/or Supplies and Materials		\$44,500	6.04%
Equipment, supplies or materials necessary to complete the project that are not included in contracts/agreements. Includes lease or rental of equipment/vehicles.			
5 Travel and Per Diem for Implementation		\$0	0.00%
Includes all necessary travel for training and implementation of the project. Training costs for tuition, materials, etc. are identified in item #7 below			
6 Official Vehicle Use (vehicles with Federal license only)		\$25,000	3.39%
Estimated costs for routine maintenance agency vehicles, leased or rental equipment, oil and gas, tires, etc. Does not include replacement cost			
7 Training (required to implement the project)		\$0	0.00%
Includes training essential/necessary for implementation of the project.			
8 Contracts, Grants, and/or Agreements		\$298,830	40.54%
CESU, IGO, Assistance agreements, Task Orders, and contracts for implementation of the project. Also includes all costs for construction/implementation of the plan.			
9 Other Necessary Expenses		\$0	0.00%
(See Appendix B-11)			
Total requested/estimated budget		\$737,080	100.00%
10 Estimated agency or partner contribution		\$151,050	
Total Estimated project value		\$888,130	

Performance Measures:

Strategic Goal 2, Objective 2.1: Conserve and Restore Natural Resources – Maintain or increase the quality of natural resources and protect their ecological integrity and sustainability.

- Outcome: Sub-Objective 2.1.1 - Increase or improve the resource base (e.g., habitat).
 - Output (Primary or Anticipated Deliverable): Restoration across approximately 25 acres of riparian habitat by planting at least 700 native trees, shrubs and forbs at varying densities.
 - Output (Primary or Anticipated Deliverable): Removal of at least 150 non-native palm trees to allow native vegetation to re-establish and reduce potential for fire.
 - Output (Primary or Anticipated Deliverable): Trimming of about 25 palm trees to minimize potential for fire.
- Outcome: Sub-Objective 2.1.2 - Protect threatened, endangered, and sensitive species and their habitat.
 - Output (Primary or Anticipated Deliverable): Protecting the endangered Moapa dace and other endemic aquatics (found nowhere else in the world) by restoring elements of the watershed – approximately 25 acres of mesquite bosque and shrub habitat; and planting at least 700 native trees, shrubs and forbs at varying densities. Most importantly, removing at least 150 non-native palm trees will reduce the potential for fire, which has devastated native wildlife in the past on Moapa Valley NWR and adjacent lands.

Strategic Goal 2, Objective 2.4: Protect Communities - Manage resources to improve the safety of communities

- Outcome: Sub-Objective 2.4.1 – Reduce the risk of catastrophic wildfire.
 - Output (Primary or Anticipated Deliverable): Removing at least 150 non-native palm trees to reduce the potential for fire on Moapa Valley NWR and adjacent lands. In 2010, a fire ignited in a palm tree grove across from the refuge and damaged numerous private properties and buildings, ultimately burning 600+ acres. Palm removal and management on Moapa Valley NWR is an essential part of reducing the risk of fire in the area.

Strategic Goal 2, Objective 2.6: Promote Project Connectivity and Sustainability – Integrate projects across agencies and prior rounds that are connected and sustainable within their environment.

- Outcome: Sub-Objective 2.6.1 - Illustrate integration with projects from prior rounds and/or projects that promote integration at a regional level.
 - Output (Primary or Anticipated Deliverable): This project will build on or emulate past successes at Moapa Valley NWR in habitat restoration and visitor area improvements, approximately 75% of which was funded in the past by the Southern Nevada Public Land Management Act. Deliverable 1 of this nomination

is designed to shift emphasis beyond the stream areas and restore mesquite bosque and upland shrub habitat through non-native plant removal and planting of native vegetation. Past successful SNPLMA projects that this project will build on for habitat restoration include: 4-12: Habitat Restoration (FW09), and 5-11: Habitat Restoration Project, Phase 2 (FW20).

Executive Committee Strategic Plan Values:

Not provided.

Compliance with Departmental and Agency Priorities, Strategic Goals, Executive Orders, and Secretarial Orders:

Departmental Priorities

1. *Create a conservation stewardship legacy second only to Teddy Roosevelt.*

The protection and ongoing recovery of the Moapa dace is a true conservation success story. Conservation efforts by the USFWS and its partners have ensured that future generations will have the opportunity to see and learn about the Moapa dace and other endemic aquatic species that only occur in the Moapa Valley.

Consistency with Executive and Secretarial Orders

1. *EO No. 13855 Promoting Active Management of America's Forests, Range Lands to Improve Conditions and Reduce Wildfire Risk*

Actively managing and removing invasive California fan palms will improve the overall ecological condition of Moapa Valley NWR by restoring native plant communities. Additionally, trimming palm skirts and removing trees will reduce wildfire risk on the refuge and adjacent public and private lands by removing hazardous fuels.

2. *SO No. 3347: Conservation Stewardship and Outdoor Recreation*

Restoring riparian habitat on the refuge will leave a lasting conservation stewardship legacy for current and future generations to enjoy. Left unmanaged, the current conditions in the riparian corridors will become degraded by the presence of palm trees that shade out native vegetation and consume precious water resources.

3. *SO No. 3372: Reducing Wildfire Risks on Department of the Interior Land Through Active Management*

Actively managing and removing invasive California fan palms will improve the overall ecological condition of Moapa Valley NWR by restoring native plant communities. Additionally, trimming palm skirts and removing trees will reduce wildfire risk on the refuge and adjacent public and private lands by removing hazardous fuels.

Ranking Criteria:

1. *Supports habitat enhancement, cultural resources, and/or public health and safety through connectivity and sustainability*

Mesquite bosque restoration will enhance habit quality for terrestrial and aquatic species including the endangered Moapa dace; phainopepla, a species of concern; Lucy's warbler, a species of continental importance; and the California leaf-nosed bat, a species of special concern. Mesquite bosques serve to reduce sedimentation of springs thereby improving water quality. Increasing the amount of mesquite bosque habitat on the landscape will also enhance habitat connectivity and migratory corridors for riparian obligates.

Removing at least 150 non-native palm trees will reduce the potential for fire on Moapa Valley National Wildlife Refuge and adjacent lands. As recently as 2010, a fire ignited in a palm tree grove across from the refuge and damaged numerous private properties and buildings, ultimately burning 600+ acres. Palm removal and management is an essential part of reducing threats to public health and safety. Also, removing palm trees is imperative for maintaining fire safe areas on Moapa Valley National Wildlife Refuge and the surrounding community.

2. *Promotes sustainability by providing benefits in the near and long term by implementing actions to conserve and sustain healthy and resilient landscapes and providing durability, relevancy, and shared support.*

This project will protect and conserve the endangered Moapa dace and other endemic aquatics (found nowhere else in the world) by restoring elements of the watershed – approximately 25 acres of mesquite bosque and shrub habitat; and planting at least 700 native trees, shrubs, and forbs at varying densities. Mesquite bosque restoration will restore the functionality, resilience, and integrity of the unique biological community that exists on the refuge and ensure its long-term sustainability.

3. *Promotes community by improving the quality of life for humans by protecting the integrity of biological communities or cultural sites.*

Intact biological communities improve the quality of life for humans by providing ecological services including providing clean air and water, mitigating floods, and reducing disaster risk. This project will conserve water that is used by people downstream of the refuge and will reduce the risk of catastrophic wildfires caused by invasive California fan palms. Additionally, refuge visitors will have the opportunity to experience the unique ecology of the Moapa Valley and learn about the negative impacts of invasive species introductions.

4. *Promotes sustainability, connectivity, and community by linking people to nature and recreational opportunities by uniting communities with important places across the landscape.*

The removal of the non-native California palms and restoring native mesquite bosques in place of the palms will restore natural connectivity throughout the fragmented Moapa Valley. Currently, small isolated patches of mesquite bosques are present, creating discrete islands of habitat for critical species, such as Lucy's warbler and phainopepla. Native amphibians and reptiles also depend on these insular patches of mesquite bosques in the Moapa Valley. The restoration efforts will connect the insular patches on the refuge, as well as with habitats on adjacent lands.

Prior to European settlement in the late 1800s, the Moapa Valley was an important area for the indigenous Nuwuvi people. With cooperation with the local Nuwuvi tribe in the implementation of riparian restoration, this project will tie the restoration to the local community and Muddy River Indian Reservation through the local involvement and support. Visitors and community members will have the ability to experience native habitats and species that depend on the Moapa Valley for survival.

5. *Project has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project.*

An estimated \$151,050.00 in contributed funds is projected. This total figure includes USFWS personnel (Fish and Wildlife Biologist, Agency Administration, and Equipment Operator) charging to base agency funding. In addition to the base salaries charged, refuge equipment will be used on the project.

The Agency Administration will contribute time for budget tracking, paying invoices, and reporting. The estimated salary that will be covered by USFWS base budget for the Administrative Officer will be \$22,200 over a five-year period. This figure is based on a total of 300 hours over the entire contract.

A USFWS Fish and Wildlife Biologist (Ecological Services) will contribute time, and therefore, salary for Endangered Species Act Section 7 consultation. We estimate the biologist will contribute 20 hours at \$58/hr for a total of \$1,160.

An Equipment Operator will contribute approximately 1200 hours at \$29/hr over the five-year period for a total of \$34,800.

Moapa Valley NWR equipment and fuel will also be utilized during the project, which results in an estimation of 300 equipment hours per year, with 8.7 gallons per hour of fuel consumption. With average equipment maintenance being \$35.00 per hour, for 150 hours, and using 2,610 gallons of fuel at \$2.55 per gallon, the FWS is estimating that \$8,578 per year will be charged to agency base funding and contribute a total \$42,890.00 over the project's five years.

Lastly, refuge volunteers will be used to assist with planting, irrigation, and palm removal. We estimate 2,000 volunteer hours valued at \$25/hr for a total of \$50,000 over the five-year period.

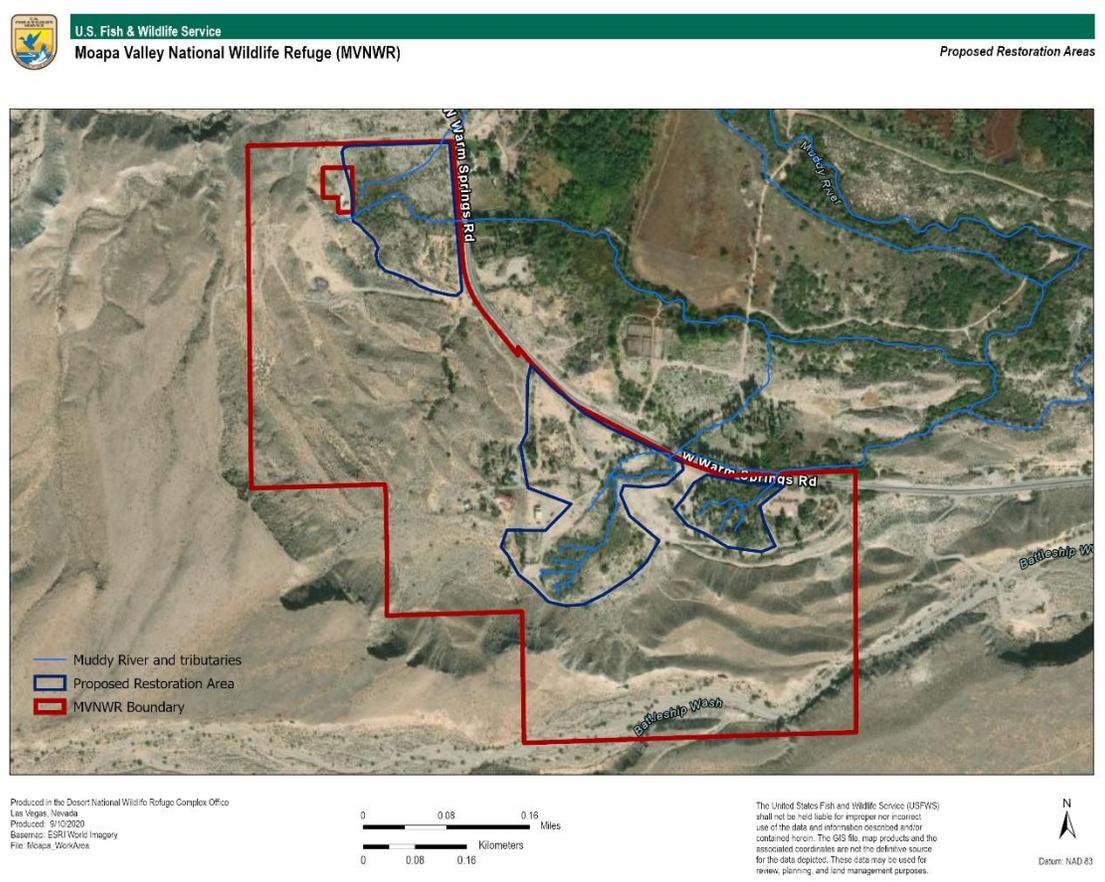
Project Location:

Moapa Valley NWR, near the town of Moapa in Clark County, Nevada. The refuge is located at latitude 36.712779, longitude -114.718745, in Congressional District 4.

Deliverables are located at various locations on the refuge; the refuge is located at latitude 36.712779, longitude -114.718745.

Map:

Moapa Valley National Wildlife Refuge, near Moapa in Clark County, Nevada



Photos:Deliverable 1: Habitat Restoration

March 2010



November 2010



June 2012

The above photos depict successful habitat restoration on Moapa Valley National Wildlife Refuge after removal of non-native palm trees in springs, streams, and wetlands followed by planting of native trees, shrubs and forbs, which are supplemented in the first 2-3 years with temporary irrigation to boost survival rates. The objective of this project is to continue the successful habitat restoration activities in previously disturbed mesquite bosque and upland shrub areas after non-native palm tree removal. Photo credit: Great Basin Institute.



This photo demonstrates another example of past restoration success on Moapa Valley National Wildlife Refuge. Past efforts focused primarily on the aquatic and riparian areas of the refuge to directly benefit the endangered Moapa dace: restoring the natural springs and streams (e.g., removing resort structures such as swimming pools), removing non-native palm trees in and near the streams, and planting native aquatic and riparian vegetation. Deliverable 1 of this project is designed to emulate and continue past success by shifting emphasis beyond the stream areas and restoring mesquite bosque and upland shrub habitat through non-native plant removal and planting of native vegetation. Photo credit: USFWS 2010.

Deliverable 1: Habitat Restoration (continued)



The potential for fire in non-native palm tree groves is significant as shown in these photos from a 600+ acre fire in 2010, primarily on the Warm Springs Natural Area. Moapa Valley National Wildlife Refuge is across the road (in forefront of photos) and no areas burned on the refuge in part due to past palm removal and other fuel-reducing management activities. As part of the habitat restoration portion of the proposed project, additional palms from the refuge will be removed or trimmed to ensure the potential for fire is minimized. Photo credit: USFWS 2010.



An example of some of the non-native palm trees on Moapa Valley National Wildlife Refuge that will be removed. If the palm trees are not managed through removal or trimming, the potential for fire is significant as the palm “skirts” are highly flammable. They are difficult and expensive to manage given that they must be trimmed or removed to reduce the potential for fire. They are also prolific, spreading seeds by the thousands each year. Photo credit: USFWS 2010.

Letters of Support:

September 14, 2020

Rob Vinson
Wildlife Refuge Manager
U.S. Fish and Wildlife Service
Pahrnagat and Moapa Valley NWRs
PO Box 510
Alamo, NV 89001

Dear Mr. Vinson:

The Southern Nevada Water Authority (SNWA) and the U.S. Fish and Wildlife Service (USFWS) have been working together to protect the endangered Moapa dace and the other sensitive species in the Upper Muddy River since 2006. The Moapa Valley National Wildlife Refuge is seeking Southern Nevada Public Lands Management Act (SNPLMA) grant funding to restore approximately 25 acres of riparian habitat located throughout the refuge.

One of the most serious threats to the Moapa dace and other sensitive aquatic species are non-native species. SNWA, USFWS, and the Nevada Department of Wildlife have been working together to reduce the threat of non-native species to the Moapa dace. In particular, SNWA and USFWS continue to remove non-native California fan palms from the Warm Springs Natural Area and the Moapa Valley National Wildlife Refuge, respectively. Palm tree removal is imperative for restoration and recovery efforts for Moapa dace and other native species. Additionally, palm tree removal reduces the risk for catastrophic wildfires like those that have occurred in Moapa Valley in the past.

Southern Nevada Water Authority is dedicated to the conservation and recovery of the Moapa dace and operates WSNA to protect the Moapa dace and its habitat (Warm Springs Natural Area Stewardship Plan, SNWA 2011). SNWA supports USFWS's SNPLMA grant application to restore riparian habitat and reduce wildfire risk both on and off the refuge. We look forward to a continued collaboration with USFWS in protecting the Moapa dace and other species.

Sincerely,

A handwritten signature in blue ink that reads "Zane L. Marshall".

Zane L. Marshall
Director, Water Resources
Southern Nevada Water Authority

SNWA MEMBER AGENCIES

Big Bend Water District • Boulder City • Clark County Water Reclamation District • City of Henderson • City of Las Vegas • City of North Las Vegas • Las Vegas Valley Water District