

Environmental Assessment Little Alkali Spring Restoration

**United States Department of the Interior
Bureau of Land Management
Bishop Field Office
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Bishop, CA 93514**

Introduction

EA Number:

DOI-BLM-CAC-070-2013-0016-EA

Proposed Action Title/Type:

Little Alkali Spring Restoration

Location of Proposed Action:

Bureau of Land Management (BLM) Bishop Field Office, Long Valley Management Area, at 37° 39' 38.48" N, -118° 48' 5.742" W in T3S, R29E, S29 NW1/4 MDB&M approximately 2 miles north of Whitmore Hot Springs in southern Mono County, CA (Figure 1).

Applicant (if any): BLM Wildlife Habitat Improvement Project

Background:

Long Valley speckled dace were historically widespread in Long Valley but declined following introduction of deleterious non-native fishes and habitat alteration (Sada 1989). The California Department of Fish & Game (now California Department of Fish and Wildlife, CDFW) elevated the species to Threatened status in its 1995 Fish Species of Special Concern in California, Second Edition (CDFG 1995). The U.S. Fish and Wildlife Service classified the Long Valley speckled dace as a species of concern in its Owens Basin Wetland and Aquatic Species Recovery Plan (USFWS 1998) and found it was "especially vulnerable to extirpation." Historical collection records exist from 5 sites in Long Valley, only one of which persists today. The species was extirpated from Little Alkali Spring in the late 1990s coincident with the unanticipated appearance of western mosquitofish. The sole known remaining population of Long Valley speckled dace inhabits the outflow of the Whitmore Hot Springs public pool. A

recent mitochondrial DNA study shows Long Valley speckled dace to be highly distinct from all other speckled dace in the Eastern Sierra and Death Valley regions (Furiness et al. 2012). Mosquitofish continue to dominate Little Alkali Spring today, preventing reestablishment of Long Valley speckled dace at this site and potentially impacting other spring-obligate aquatic animals, including desert tryonia springsnail (*Tryonia protea*).

Proposed Action and Alternatives

Purpose and Need for Action:

The purpose of the proposed action is to eliminate invasive mosquitofish from a portion of the Little Alkali Spring outflow channel in order to restore it to a condition suitable for establishing a population of Long Valley speckled dace, while restoring the spring to its historic ecological trajectory by promoting the functioning of natural ecological processes.

There is an immediate need to safeguard Long Valley speckled dace by establishing additional self-sustaining populations in habitats devoid of deleterious non-native fishes, but no suitable sites are available. This need can only be met by removing non-native fishes from existing degraded habitat.

Proposed Action:

The BLM Bishop Field Office, in collaboration with CDFW, proposes to temporarily dewater a 350-meter reach of the spring channel downstream of Little Alkali Spring for 1-4 weeks in order to remove non-native western mosquitofish; and install a fish barrier to prevent mosquitofish downstream from recolonizing the target reach. Temporary dewatering would be accomplished through the use of flexible polyethylene pipe to bypass flows around the target reach. The entire project would occur on public lands.

Access to the site is from U.S. Highway 395 to Benton Crossing Road, then via an existing dirt road on BLM land. Access to the stream is less than 150 meters by foot. Project vehicles would not travel off-road.

The components of the dewatering system are outlined below and depicted in Figure 2.

First flow capture point intake and diversion pipes

A single 1 meter length of 8" PVC pipe would be temporarily placed with sand bags in the spring channel 2.5 meters downstream of the headspring to capture all flow from the spring source. This intake pipe would be joined to approximately 350 meters of 9" flexible polyethylene pipe laid on the ground surface, which would carry spring flows downstream around the target reach and return them to the spring channel immediately below a fish barrier.

Second flow capture point intake and diversion pipes

A second temporary 8" PVC intake pipe and sand bags would be used in the spring channel just downstream of the seeps to capture any additional seepage or flows reaching that point. Any water diverted at this location would be conveyed away from the dewatered channel using polyethylene pipe and allowed to percolate into the meadow area north of the spring channel.

Fish barrier

A 2 meter length of 10 inch diameter PVC pipe would be permanently placed in the spring channel with a downward slope such that the velocity of water flowing through it would prevent upstream movement of mosquitofish from downstream (Figure 2). The pipe to be used has weathered to a rust/earth color. BLM and CDFW personnel would set it into the channel using hand tools, fill earth around it, and transplant sod to protect and naturalize the installation.

The proposed action would be implemented in winter, taking advantage of freezing temperatures to maximize mosquitofish mortality. After sufficient dewatering, 1 to 4 weeks, CDFW would conduct thorough visual surveys and trapping to confirm mosquitofish eradication; then the intake and diversion pipes would be removed and normal flows would be returned to the spring channel.

Reintroduction of Long Valley speckled dace is not part of the proposed action assessed in this EA. If CDFW surveys show continued absence of mosquitofish upstream of the fish barrier after the project, reintroduction would be addressed via a separate planning process.

The proposed project includes the following stipulations:

- Project area vehicle access would be limited to existing roads. All project work would be conducted by hand crews working on foot.
- No toxic materials or fluids would be used or disposed at the site.
- To minimize the importation or spread of invasive non-native species, all tools, equipment and materials from outside the project area would be inspected and washed prior to transport to the project site. The project area would be monitored for non-native invasive species for 3 years following project completion.
- To protect cultural resources, exclusion areas would be identified where project specific archeological surveys have identified cultural resources that could be negatively impacted by the proposed project. No digging or rock collection would occur in any area that has not received a site specific cultural resource survey.
- If previously undiscovered archaeological resources are encountered during project implementation, operations would be immediately stopped and the Bishop Field Office manager

and archaeologist notified. The project would be modified to avoid impacts to any late discoveries of archaeological resources prior to the resumption of work.

No Action Alternative:

Under the No Action alternative, no temporary intake or diversion pipes would be placed, there would be no temporary dewatering of the channel, no fish barrier would be constructed, and the target reach would continue to be occupied by non-native mosquitofish.

Plan Conformance:

The proposed action is subject to the Bishop Resource Management Plan (RMP), approved March 25, 1993 (USDI BLM 1993). The proposed action was developed and designed to implement RMP guidance and to ensure conformance with the General Polices, Area Manager's Guidelines, Valid Existing Management, Standard Operating Procedures, Decisions and Support Needs prescribed in the Bishop RMP. The proposed action has been reviewed and is in conformance with the plan.

The 1993 Bishop Resource Management Plan supports this type of action with the following Decisions:

- Area-Wide Decisions, page 17: "Protect and enhance unique or important vegetation communities and wildlife habitats.... Manage all stream reaches that contain essential habitat characteristics described in the recovery plan for any endangered or threatened fish species to meet desired plant community goals for riparian areas."
- Decision for Long Valley Management Area, page 39: "Develop new habitats for Owens tui chub and Owens speckled dace." [Long Valley speckled dace inhabit the upper Owens River system and were classified as Owens speckled dace at the time the RMP was written; they have since been found to differ enough to be considered as a separate subspecies (Sada et al. 1995, CDFG 1995).]

The project is in conformance with Standard Operating Procedures, RMP page 12:

- Consult with the California Department of Fish and Game [now CDFW] prior to design and accomplishment of wildlife habitat improvement projects.
- Manage candidate species, sensitive species and other species of management concern in a manner to avoid the need for listing as state or federal endangered or threatened species.
- An inventory for candidate species and other species of management concern will be completed prior to authorizing any activity that may impact a stream with a thermal source.

The project is in conformance with Area Manager's Guidelines for Visual Resource Management (VRM), RMP page 14:

- Enforcement emphasis for VRM classes 2-4 will be along key observation points. Outside key observation points, the Bureau will apply designated VRM class prescriptions but the Area Manager may allow development to exceed the VRM class for reasons such as technological infeasibility or low visitor use.
- The Area Manager may allow temporary projects to exceed VRM standards in class 2-4 areas, if the project will terminate within 2 years.

Environmental Analysis

Air Quality:

Affected Environment

Long Valley is not within any federal non-attainment/maintenance area under jurisdiction of the Great Basin Unified Air Pollution Control District. Federal actions are not subject to conformity determinations under 40 CFR 93.

Impacts of the Proposed Action

The project would require one or two vehicle trips for installation and one vehicle trip monthly for the first year for monitoring, then once every 3 years for monitoring; no other mechanical equipment would be used. Vehicles may raise dust while driving on dirt roads to access the project area, if the project takes place while the soil is dry; vehicles would produce emissions including precursor emissions for ozone. These impacts to air quality would be minimal and short in duration, and would not produce a noticeable or measureable change in air quality in the context of dust and emissions generated by vehicles traveling dirt roads in Long Valley for recreation and other purposes.

Impacts of No Action

Dirt roads would continue to be used by vehicles accessing the general area for recreation and other purposes, generating a small amount of dust and emissions.

Cultural Resources:

Affected Environment

The proposed project is situated adjacent to a previously identified prehistoric archaeological site (MNO-699). The site contains several bedrock milling features, three small rock-shelters, and a sparse lithic scatter composed primarily of obsidian. The site was recently surveyed and updated by BLM archaeologists in 2007. At that time the site boundary included the riparian zone and spring complex located within the drainage that feeds Little Alkali Lake. Further intensive archaeological survey, for this proposed undertaking, revealed that the riparian area surrounding the springs is devoid of cultural resources. The proposed action has no potential to adversely affect cultural resources. The proposed ground disturbing activities are of a very limited scale and are located in areas containing no archaeological deposits. Each of the locations proposed for ground disturbance has been intensively surveyed and found to contain no cultural deposit.

Impacts of the Proposed Action

There would be no adverse effect to cultural resources as a result of this undertaking. If previously unidentified cultural resources are uncovered during project implementation, project activity would stop and the Bishop Field Office manager and archaeologist would be notified. The project would be modified to avoid any adverse effects to previously unidentified cultural resources before work would be allowed to continue.

Impacts of No Action

The no action alternative would have no impact on cultural resources located within the project area.

Global Climate Change:

Affected Environment

United States Department of Interior, Order Number 3226, signed January 19, 2001, Evaluating Climate Change Impacts in Management Planning, is an order to ensure that climate change impacts are taken into account in connection with planning and decision making. Climate change refers to any significant change in measures of climate (e.g. temperature or precipitation) lasting for an extended period of time (decades or longer) and may result from natural processes, such as changes in the sun's intensity or in ocean circulation; or human activities that change the atmosphere's composition (e.g. burning fossil fuels) or the land surface (e.g. urbanization) (IPCC 2007). There is broad scientific consensus that humans are changing the chemical composition of our atmosphere (Jones & Stokes August 2007), likely influencing temperature, precipitation, storms and sea level (IPCC 2007). Rising greenhouse gas (GHG) levels are likely contributing to global climate change.

Impacts of the Proposed Action

The proposed action would result in minor contributions of GHG emissions associated with the operation of vehicles and equipment required for project implementation. These contributions would not have a noticeable or measurable effect, independently or cumulatively, on a phenomenon occurring at the global scale and believed to be due to more than a century of human activities.

Impacts of No Action

The no action alternative would not contribute to GHG emissions and would have no impact on climate change at either the local or global scale.

Invasive, Non-Native Species:

Affected Environment

Non-native mosquitofish occupy the Little Alkali Spring outflow channel and are apparently responsible for the loss of the native Long Valley speckled dace population. No other non-native animal or plant species are known at the project site.

Impacts of the Proposed Action

The purpose of the proposed action is to eradicate the non-native mosquitofish from the project area; project success will be judged by the absence of mosquitofish as determined by CDFW surveys.

Soil disturbance, which can create conditions hospitable to invasive plants, would be minimal. Furthermore, the presence of an existing dense layer of native riparian vegetation and project design features are expected to minimize the potential for establishment of any non-native plant species.

Impacts of No Action

Without the proposed action, non-native mosquitofish would continue to occupy the target reach, making it unsuitable habitat for native fishes.

Native American Cultural Values:

Affected Environment

Riparian areas often contain plant species that were traditionally targeted by Native American groups. Many of these traditions have been discontinued since shortly after Euro-American contact, but a few still persist. It is unknown if the springs above Little Alkali Lake were, or still are, areas of traditional gathering.

The restoration of native fishes is a goal that many Native American groups support. Recent efforts at habitat creation and restoration for native fishes by the Bishop Paiute Tribe reflect those values.

Impacts of the Proposed Action

The removal of non-native fish and the restoration of a native species are wholly consistent with Native American values. The scale and scope of the proposed project are so minor that there would be no negative impacts to traditionally targeted flora or fauna.

Impacts of No Action

The no action alternative would result in no change and thus would not affect Native American values.

Recreation:

Affected Environment

Common recreation uses of Long Valley include off-highway vehicle touring, running, bicycling, cross-country skiing, sightseeing, hunting, fishing and hot springs bathing. The project site is not a known popular destination but receives incidental visitation in the course of other recreation activities. There are no known recreation uses of the aquatic environment; Little Alkali Spring and its outflow channel are unsuitable for fishing or bathing.

Impacts of the Proposed Action

Impacts to recreation would be minimal. The proposed action would not affect any vehicle travel route. Any incidental visitors to the site on foot or cross-country skis during the 1 to 4 week implementation period would need to go over or around approximately 350 meters of 9" diameter pipe; this would not constitute a substantial obstacle. The quality of sightseeing would be minimally affected (see Visual Resources section).

Impacts of No Action

No change to the existing recreation opportunities would be anticipated if the project were not implemented.

Soils:

Affected Environment

Soils of the project area are primarily comprised of Aquic Torriorthents-Aquents-Cashbaugh association (USDA 2002). The ecological site type is sodic meadow and wet sodic meadow (USFWS 1998). Soils at the site are currently stable and disturbance is limited to periodic human and animal trampling and natural weathering.

Impacts of the Proposed Action

The proposed action would result in a small amount of disturbance to soils during installation of the fish barrier. The amount of soil disturbed would be limited to the minimum amount of disturbance necessary to install the 2 meter length of 10" diameter pipe. Installation would be done using hand tools, thus keeping the area of disturbance to a minimum. Disturbed soil and vegetation would be placed back around the pipe. Disturbed vegetation is expected to continue growing the following growing season and the soil is expected to stabilize naturally within one to two growing seasons.

Impacts of No Action

No change to the existing soil condition would occur if the project is not implemented.

Vegetation, including Endangered, Threatened, and Special Status Species:

Affected Environment

The vegetation of the project area is primarily comprised of meadow and wetland grasses and sedges. Common species include salt grass (*Distichlis spicata*), Douglas sedge (*Carex douglasii*), Sandberg bluegrass (*Poa secunda* ssp. *juncifolia*), baltic rush (*Juncus balticus*) and *Eleocharis*. Vegetation cover in the project area is high, generally greater than 60% and more commonly 80% or more.

Alkali ivesia (*Ivesia kingii* var. *kingii*) is a BLM designated sensitive plant and has the potential to occur in the project area. Alkali ivesia occurs in alkali meadow habitats in the Long Valley area as well as elsewhere within the field office area. Alkali ivesia is generally abundant where it occurs within the field office area.

Impacts of the Proposed Action

Implementation of the proposed action would result in the uprooting of a small area (the minimum amount necessary to install the 2 meter length of 10" diameter pipe) of soil and vegetation. However, the proposed project is not expected to measurably impact vegetation, including BLM designated

sensitive plants. The project would occur during winter months while vegetation is dormant, and the vegetation would be replaced following installation of the fish barrier; therefore it is expected that placing the fish barrier would cause minimal or no mortality to vegetation. Diverting water from the channel is also not expected to have a measurable impact on vegetation because the vegetation is expected to be dormant.

Impacts of No Action

There would be no change from the current condition of the vegetation if no action were implemented.

Visual Resources:

Affected Environment

All BLM-administered public land in Long Valley, including the proposed project site, is designated as Visual Resource Management (VRM) Class II. The objective for VRM II as defined in the Bishop RMP is “to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen from key observation points, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.”

The basic elements of form and line in the project area landscape are characterized by undulating terrain and the curving lines of the spring channel. Color within the narrow stream channel is provided by vegetation which is deep green for most of the year, dark brown soil, and the reflective surface of the water. Color of the meadow area varies by season; in winter when the project would be implemented, shades of gold and brown. Texture is provided by densely-growing streamside and meadow vegetation, primarily graminoids (grasses, sedges, etc.) of varying length.

Impacts of the Proposed Action

The proposed project site is not visible from key observation points, i.e. main travel routes (Highway 395 and the Benton Crossing Road) because it is in a low point within undulating terrain. Viewed at close range, temporary pipeline laid on the ground would create moderate to strong but small-scale and very short-term (1-4 weeks) contrasts in form, color and texture. When the temporary pipeline is removed no trace would remain. The 10’ diameter, 2 meter long fish barrier pipe would remain in the stream channel but would contrast very little with the form or line of the existing landscape because it would be set into the channel. The pipe’s weathered and irregular earth tones would contrast weakly with the color of the existing landscape. There would be a moderate, very small-scale contrast of texture. Even when viewed at close range, away from key observation points, the fish barrier would not attract attention. The project would meet VRM II objectives.

Impacts of No Action

No change to the existing landscape would be anticipated if the project were not implemented.

Water Quality:

Affected Environment

Little Alkali Spring is a thermal spring with outflow estimated at 0.1 cubic feet per second. Seeps near the spring outflow channel contribute an immeasurably small amount to the flow. The water is used by wildlife and livestock. It is within the Owens River watershed, which includes waters collected by Los Angeles Department of Water and Power for municipal water sources; but the spring's flow does not normally reach the river system. CDFW data obtained in July 2012 are indicative of good water quality (S. Parmenter pers. comm.).

Impacts of the Proposed Action

Installing the temporary pipe and the permanent fish barrier would entail some minor, temporary increase of sediment load in the spring outflow. The proposed temporary and permanent pipe materials are not expected to leach chemicals into the water.

Impacts of No Action

No change to water quality would be anticipated if the project were not implemented.

Wetlands and Riparian Zones:

Affected Environment

Spring outflow at the project site is estimated at 0.1 cubic feet per second, and seep outflow is too slight to be measured or estimated. The meadows near the stream are not saturated, due to a fairly steep gradient. Wetland/riparian vegetation at the site is watered by the spring and seeps; typical vegetation in the project area is described above in the Vegetation section of this document.

Impacts of the Proposed Action

Temporary diversion of water is not expected to affect the wetland/riparian habitat, as plants would be dormant or slow-growing and would need little water during the winter when the project is implemented. Seep flow is too slight to cause erosion when diverted to the meadow.

Impacts of No Action

There would be no change to wetland or riparian habitats if the project were not implemented.

Wildlife, including Endangered, Threatened, and Special Status Species:

Affected Environment

Fish

Non-native mosquitofish are the only fish currently inhabiting the outflow of Little Alkali Spring, as indicated by surveys conducted by California Department of Fish and Wildlife. Long Valley speckled dace, listed by the State of California as Threatened and by the U.S. Fish and Wildlife Service as a species of concern, inhabited the spring outflow until the late 1990s when mosquitofish arrived and presumably caused or contributed to the dace's extirpation from the site.

Aquatic invertebrates

Desert tryonia springsnail (*Tryonia protea*) is an endemic mollusk species found in Little Alkali Spring and its outflow, with the area they occupy extending for more than 400 meters downstream of the spring, or 50 meters downstream of the project area (Steve Parmenter pers. comm.). Springsnails are dependent upon freshwater springs, indicating a long-standing, reliable water source; and sensitive to environmental change. Other aquatic invertebrates likely to be found in the project area during the winter inhabit muck and detritus of the substrate.

Greater Sage-grouse, Bi-State Distinct Population Segment (DPS)

The Bi-State DPS of Greater Sage-grouse are a California BLM designated sensitive species and are currently proposed for listing as Threatened under the Endangered Species Act. The project area lies within the Long Valley breeding complex of the South Mono population management unit (PMU) and is within proposed critical habitat for the Bi-State DPS. The population is non-migratory, occupying Long Valley year-round and using different habitat features for their seasonal requirements. Abundant meadows in Long Valley, such as the project site, provide important breeding (spring), brood rearing (late spring/early summer) and late summer habitat (Bi-State TAC, 2012). In winter sage-grouse do not rely on meadows, but feed almost exclusively on sagebrush (Connelly et al. 1990).

Other terrestrial wildlife in the project area include songbirds, small mammals and reptiles, and mule deer. The proposed project area provides summer migratory and summer habitat for the Casa Diablo mule deer herd.

Impacts of the Proposed Action

The proposed action would have a positive effect on special status native fish by restoring suitable habitat for potential reintroduction of Long Valley speckled dace. As the diverted water would be

returned to the stream immediately below the project site, no adverse impacts to downstream aquatic habitat are expected. Although some aquatic invertebrates would be killed, there would be no long-term population level effects to aquatic invertebrate populations including Desert tryonia (*Tryonia protea*) because they occupy habitats within the soft bottom detritus that would not entirely dry up; and because their populations extend upstream and downstream of the target reach and in the seeps, allowing for re-colonization.

Human presence and activity would likely displace terrestrial wildlife briefly during project implementation. The temporary pipeline may present a short-term obstacle for small ground-dwelling mammals that are active in winter (rabbits, hares, voles, shrews). This may interfere with the foraging activities of a few individuals, especially any voles or shrews using the meadow; but is not expected to affect any species on a population level. The temporary pipeline would not present an obstacle to mule deer or songbirds. The proposed project would have no measureable effect on sage-grouse or proposed critical habitat for the Bi-State DPS because they are able to fly and do not rely on the habitat type represented by the project area during the winter, and because there would be no change to sage-grouse habitat conditions as a result of project implementation.

Impacts of No Action

If the proposed action were not implemented, non-native mosquitofish would continue to inhabit the target reach of the spring channel and it would remain unsuitable habitat for the native Long Valley speckled dace.

Resources with No Potential for Effects:

The proposed project has no potential to impact the following because they are not found in or near the project area: Areas of Critical Environmental Concern, essential fish habitat, low-income or minority populations, prime or unique farmlands, flood plains, wild horse and burro populations or herd management areas, wild and scenic rivers, designated wilderness, wilderness study areas or wilderness characteristics. There are no hazardous waste sites, and the project would not involve the use or storage of hazardous materials other than fuel and oil used in project vehicles. No specific social or economic values are known to be directly associated with the proposed project area.

The project area is in the wilderness characteristics inventory unit identified in the original 1979 inventory as CA-010-073, Crowley Lake unit, encompassing BLM-administered lands in Long Valley northwest, northeast and immediately south of the lake. The unit was found to lack wilderness characteristics as defined by the 1964 Wilderness Act because “maintained roads and non-public land divide the unit into several parcels that do not contain 5000 acres of contiguous public land and are not of sufficient size to make practical their preservation and use in an unimpaired condition” (Bishop Field Office files). A 2013 inventory update finds that this is still the case.

The project is within the Hot Creek grazing allotment which is not used during the winter, so there would be no effect to livestock or rangeland management.

Cumulative Effects:

There are no identified incremental or long-term negative impacts associated with the proposed action that would contribute to cumulative impacts within, or beyond, the immediate project vicinity. The addition of the proposed action to existing and future local and regional activities and impacts would not add to, or cross a threshold of, impacts that would result in a measureable effect on the human environment.

Implementation Monitoring

BLM Bishop Field Office staff will visit the project area during and after implementation as needed to ensure that work is conducted according to project specifications and stipulations in this document.

Effectiveness Monitoring

CDFW will evaluate the project’s effectiveness by conducting visual surveys for mosquitofish.

Consultation and Coordination

List of Agencies, Organizations, and Individuals Consulted:

California Department of Fish and Wildlife
Eastern Sierra Land Trust

List of Preparers:

Joy Fatooh	Wildlife Biologist
Greg Haverstock	Archaeologist
Martin Oliver	Botanist
Kirsten Heins	Outdoor Recreation Planner
Jeff Starosta	Rangeland Management Specialist

Date: 2013-08-14

Reviewed By:

/s/ Dale F. Johnson

Date:

6/11/2014

Dale Johnson, Supervisory Natural Resource Specialist

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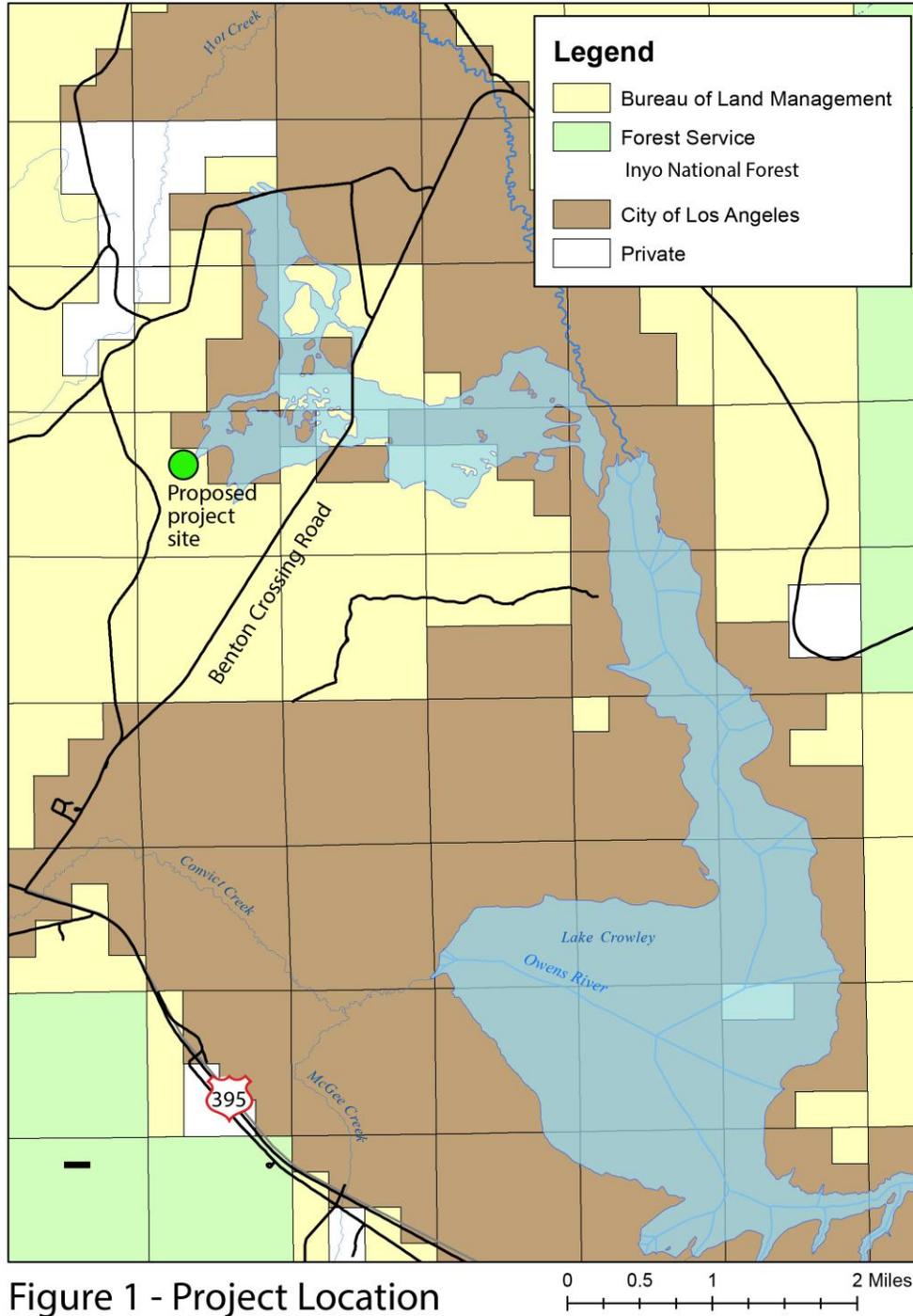
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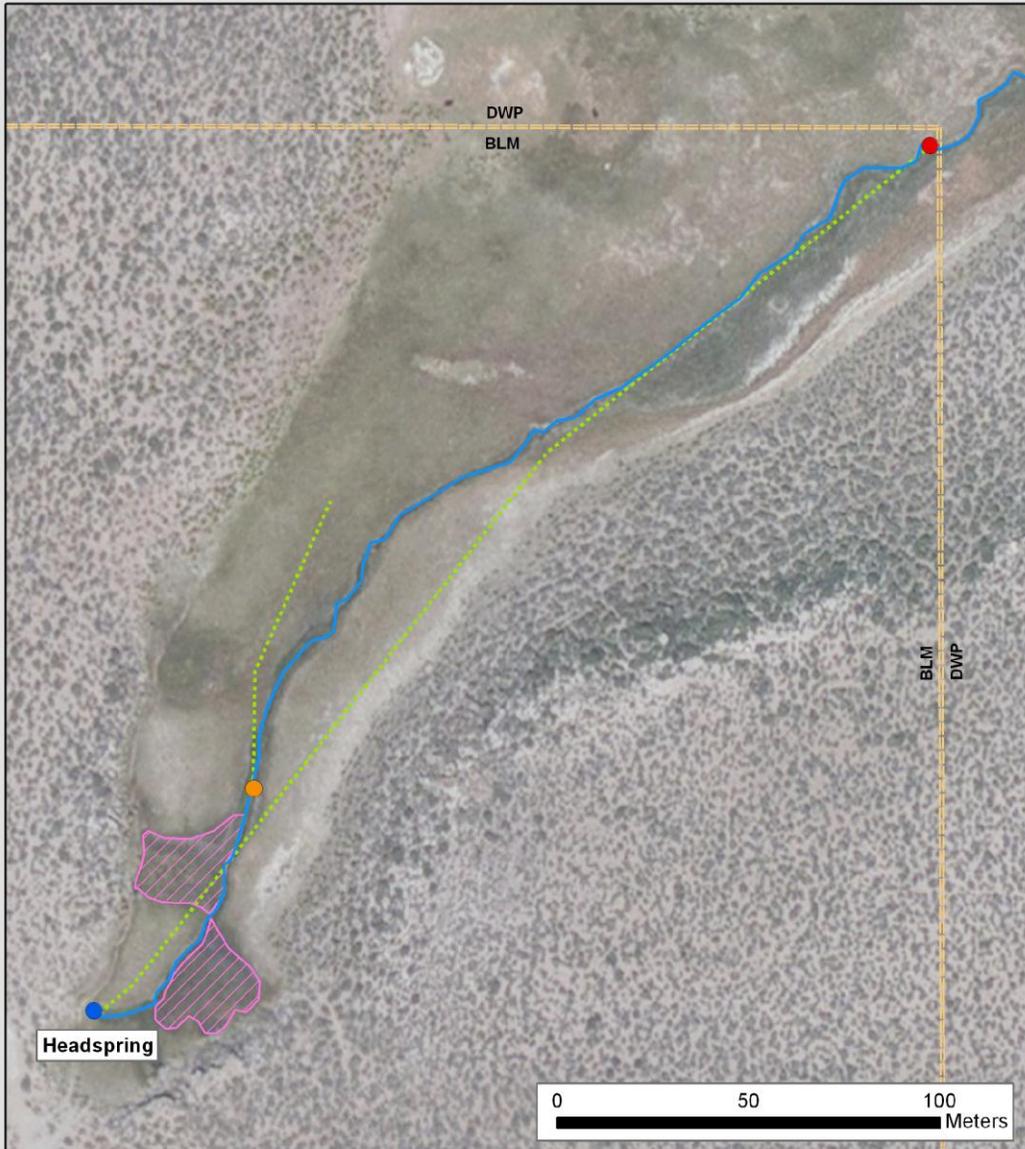
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Maps

Little Alkali Spring Restoration



Little Alkali Spring Restoration Project Area



Legend

- 1st Flow Capture Point
- 2nd Flow Capture Point
- Fish Barrier
- BLM Boundary
- ... Diversion Pipes
- ▨ Seeps

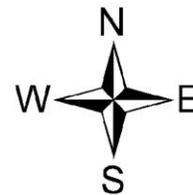


Figure 2 - Project Components