

**Relict Leopard Frog (*Lithobates onca*)  
Refugia at the Springs Preserve**

by

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In 2017, the Las Vegas Valley Water District became a participant in a Relict Leopard Frog Candidate Conservation Agreement with Assurances (CCAA) between the Nevada Department of Wildlife and the US Fish and Wildlife Service (Appendix I). Since then, the Springs Preserve has upgraded two of its existing ponds, North Fork Ponds 1a and 1b (Fig. 1), to increase their suitability as Relict Leopard Frog (*Rana onca*) refugia. Our objective is to document the introduction of Relict Leopard Frog into the two ponds, which were designated as North Fork Ponds 1a and 1b (Fig. 1).



**Fig. 1.** Location of existing refugia ponds constructed at the 180-acre Springs Preserve in Las Vegas, Clark County, Nevada.

The following pond system upgrades were implemented on North Fork Ponds 1a and 1b: (1) the ponds were concrete lined to facilitate removal of undesirable aquatic macrophytes (e.g., *Typha*, *Chara*) that can choke small aquatic systems; (2) a waterfall was added to each pond to increase circulation and aeration; (3) a pair of skimmers were added to address falling leaves from overhead cottonwood trees (*Populus fremontii*); (4) two independent aeration systems were added to aerate the lower pond and address normal decreases in oxygen levels and pH at night; (5) submerged planters were added to provide biological filtration and spawning beds; and (6) activated carbon was added to aid with water clarity and incidentally remove any impurities that might be present. These

aeration & filtration improvements also alleviate the health risk posed by mosquito-borne diseases, as mosquitoes breed in stagnant water bodies.

The integrated shoreline planters received native plants in April and plant growth has proceeded rapidly (Fig. 2a, b).



**Fig. 2.** Springs Preserve Pond 1a showing native vegetation in integrated planters on (A) 5 April 2018 and (B) on 29 May 2018.

**Provenance:** The Relict Leopard Frogs used to establish a refugium at the Springs Preserve were obtained from remnant populations of the species in Black Canyon, Lake Mead National Recreation Area, Clark County, Nevada, USA. Conservation Team members Jef Jaeger and Rebeca Rivera collected embryos from three egg masses and reared the tadpoles until metamorphosis. The collection and husbandry of the Relict Leopard Frogs are beyond the scope of this report and are addressed in other Relict Leopard Frog Conservation Team documents.

**Timing of introduction:** We released the Relict Leopard Frogs into pond NF 1b on 29 May 2018. We wanted to introduce the frogs to the ponds before ambient temperatures rose towards summer conditions, so the frogs could acclimatize gradually. Temperatures, however, are somewhat attenuated at the release site because of the large overhead cottonwood trees and the pond aeration.

**Number released:** The initial introduction was comprised of 100 newly transformed Relict Leopard Frogs, which were released shortly after 10:00 AM on 29 May 2018 by Thomas O'Toole (Springs Preserve), Raymond A. Saumure (SNWA), and Rebeca Rivera (UNLV) and Jef Jaeger (UNLV), among others.

**LVVWD permits & authorized participants:** Enhancement of Survival Permit & Appendix I of Safe Harbor Agreement (attached).



**APPENDIX I**  
**Conservation Agreement**

**LANDOWNER COOPERATIVE AGREEMENT**  
**Pursuant to**  
**PROGRAMMATIC CANDIDATE CONSERVATION AGREEMENT**  
**WITH ASSURANCES**  
**FOR THE RELICT LEOPARD FROG**  
**IN CLARK COUNTY, NEVADA**

**1. INVOLVED PARTIES and INTRODUCTION**

This Landowner Cooperative Agreement (CA), between the Nevada Department of Wildlife (Department) and the Las Vegas Valley Water District (Cooperator), is intended to promote good land stewardship by assisting the Cooperator in carrying out actions to benefit the relict leopard frog (*Lithobates [Rana] onca*) on certain land owned or controlled by the Cooperator. Participation in this CA is a prerequisite for obtaining a Certificate of Inclusion (COI) in the form of Exhibit A, attached hereto, from the Department issued as part of the agreement between the Department and the U.S. Fish and Wildlife Service (Service) titled, "Programmatic Candidate Conservation Agreement with Assurances for the Relict Leopard Frog in Clark County, Nevada" (Agreement) dated September 24, 2015, which is incorporated herein by reference. Compliance with this CA, the Agreement, and COI will authorize take of relict leopard frogs, pursuant to federal law, by the Cooperator resulting from land use and conservation activities as described herein, should the species become listed as endangered or threatened in the future. Additionally, the enrolled property owned by Cooperator would not be subject to increased property use restrictions if the relict leopard frog is listed as endangered or threatened in the future. Compliance with this CA, the Agreement, COI and Letter of Take Authorization will authorize take of relict leopard frogs by the Cooperator pursuant to Nevada law.

**2. ENROLLED PROPERTY**

The Cooperator owns or has legal controlling authority for property in Clark County, Nevada, known as the Springs Preserve, which contains habitat that may be suitable for use by relict leopard frogs. The Department will enroll the entire 180 acres of this property under the Agreement, as shown on the attached property map (Fig. 1) (the "property"). The aliquot legal description for the Springs Preserve is Township 20 South, Range 61 East, M.D.M., Clark County, Nevada:

Section 29: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$ , SE  $\frac{1}{4}$  SW  $\frac{1}{4}$

Section 30: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$

Section 31: NE  $\frac{1}{4}$  NE  $\frac{1}{4}$ , SE  $\frac{1}{4}$  NE  $\frac{1}{4}$

Section 32: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$ , SW  $\frac{1}{4}$  NW  $\frac{1}{4}$

Other species of listed or candidate plants or animals may also occur on the property, but no incidental take of these other species is authorized or permitted under this CA.



### 3. DESCRIPTION OF EXISTING CONDITIONS

The 180-acre Springs Preserve encompasses approximately 90 acres of restored Mojave Desert plant communities (Fig. 1) and is a leader of cultural and environmental sustainability, having achieved national and international acclaim. As Las Vegas' cultural center, some 250,000 visitors a year come to the birthplace of Las Vegas to be entertained and enlightened about southern Nevada's archaeology, botany, geology, history, paleontology, and wildlife. Recreational and cultural activities range from hiking, biking, and birding to festivals, weddings, and receptions. Approximately 90 acres of degraded Mojave Desert plant communities have been restored since 2000 and are accessible through a new trail network. The other primary land use at the Springs Preserve is that of an active well field with associated water distribution infrastructure and maintenance. Groundwater pumping occurs seasonally at the Springs Preserve to meet peak water demands for the Las Vegas community.

In an effort to partially recreate portions of the Las Vegas Creek, the Cooperator has created 10 engineered ponds within this area. The primary sources of water for the ponds are intended to be the water that will be pumped from the existing constructed wetland in the Meadows Detention Basin, located within the Springs Preserve, and potable water delivered from the Las Vegas Valley Water District system. However, the Cooperator also has access to alternate sources of water for these ponds that may include, but are not limited to, urban run-off through existing drainage channels, well flushings, fire hydrants, and existing groundwater wells.

The Meadows Detention Basin (Fig. 2) is fed by urban run-off flowing down the Alta Channel. Although these flows are currently insufficient to irrigate both the existing constructed wetland and all 10 ponds, future construction on the Alta Channel is expected to triple the geographic area draining into the Meadows Detention Basin, which would increase the amount of urban run-off available to be used. Currently, the Cooperator holds Permit No. 82231 for 0.25 cubic feet per second of water from the Alta Channel. Until such a time as future work on the Alta Channel is completed, or other sources of water are available, it is estimated that the existing run-off water volume flowing into the Meadows Detention Basin is sufficient to maintain three of the 10 ponds constructed in the Las Vegas Creek. If additional run-off water becomes available in the future, the Cooperator would apply for additional water rights permits from the Nevada State Engineer.

For ponds that do not receive potable water, water will be pumped from the bottom of the second pond in the Meadows Detention Basin (Fig. 2) to the ponds where relict leopard frogs would be introduced. The Meadows Detention Basin plant community serves as a biological filter, cleansing the water as it flows through the wetland. The Cooperator does not intend to conduct any additional water quality treatment prior to moving water into the ponds. Drawing water from the bottom of the pond in the Meadows Detention Basin reduces, but does not eliminate, the potential of pumping surface contaminants, such as hydrocarbons, into the refugia ponds. However, a number of measures have been put into place to minimize the likelihood of such an occurrence, as discussed herein.

Periodic water quality testing will occur in each pond inhabited by relict leopard frogs; data on dissolved oxygen, pH, conductivity, and water temperature will be recorded. These data will be used to assess the health of the pond ecosystems as part of an adaptive management strategy. In the event of a short-term water shortage (due to unavailable water or a water quality issue), the Cooperator will pursue alternative means of obtaining water at the Springs Preserve, including but not limited to adjacent irrigation systems and/or potable water.

Given the porous nature of the Springs Preserve geology, the ponds were constructed with concrete or reinforced 45 millimeter polypropylene liners set over a polyvinyl chloride (PVC) pipe frame. These concrete and liners are necessary, as the bed of the Las Vegas Creek is crossed by two faults and numerous fissures. The ponds with polypropylene liners are approximately 3 feet deep, with approximately 4 inches of pea gravel and flagstones in the bottom to accommodate an aquatic macrophyte community. Concrete berms serve as dams to retain water in the sloping creek bed where needed. Dams were constructed with overflow notches. Occasionally, sufficient water will be available (e.g., well flushing) to intentionally overflow the ponds, through screens as described below, and thus provide water to the aging cottonwood trees that line the historic Las Vegas Creek. The overflow notches have stainless steel screens with 1/8 inch perforations to help retain all but the smallest aquatic organisms during flushing events. The surface areas of the 10 ponds range from approximately 400–1,034 square feet.

Currently, all 10 ponds and associated piping have been constructed. Construction of the intake / pump station to convey water from the Meadows Detention Basin to the system of pipes in the Las Vegas Creek has also been completed. Planting of riparian habitat in and around the first three ponds (North Fork ponds #1a and 1b and South Fork pond #2; Fig. 2) has been completed.

Frogs are capable of moving overland and colonizing new habitats, particularly during rain events. Consequently, relict leopard frogs may colonize other ponds, including the well-established wetland created in 2003 within the Meadows Detention Basin (Fig. 2). Therefore, the Cooperator is enrolling the entire 180 acres of the property as part of the CA, Landowner Certificate of Inclusion, and associated Authorization of Take.

*Force majeure* events such as severe storm events, flooding, drought, extreme sustained heat, fire, invasion by non-native predators, or insect/disease epidemics are beyond the reasonable control of the Cooperator, and could either extirpate relict leopard frogs from enrolled lands or render relict leopard frog habitat on enrolled lands unsuitable for continued occupation. These events may reduce relict leopard frog numbers or habitat through no fault of or negligence of the Cooperator. In such circumstances the Cooperator, the Department, and the Service may agree to modify or adjust the CA's conditions to reflect the new circumstances. No additional conservation measures besides those provided in this CA shall be required without the agreement of the Cooperator as long as this CA is being properly implemented. Moreover, additional conservation or mitigation measures will not involve the commitment of additional land,

water, or financial compensation, or additional restrictions on the use of land, water, or other natural resources otherwise available for development or use without the agreement of the Cooperator.

#### **4. CONSERVATION MEASURES AND RESPONSIBILITIES OF THE PARTIES**

4.1 CONSERVATION MEASURES. The primary objective of this CA is to enhance the conservation status of the relict leopard frog in Clark County, Nevada through the restoration and maintenance of habitats suitable for the establishment of populations of the relict leopard frog by translocation of animals of various life stages. In order to accomplish this, it is essential that the Cooperator, the Service, and the Department work together to provide suitable habitats and positive stewardship for relict leopard frogs. Management activities that are undertaken through this CA will result in additional habitat being available for relict leopard frogs, and an enhanced network of relict leopard frog populations becoming established across the presumed natural range of the species. Since the property is not occupied by relict leopard frogs at the time of enrollment, the Cooperator has no responsibilities under this CA except to report the absence of relict leopard frogs to the Department on an annual basis until such a time as the Cooperator and the Department agree to place relict leopard frogs on the property.

Management actions that will be implemented once relict leopard frogs are placed on the Cooperator's property are detailed under Section 4.2 "Responsibility of Parties".

Nothing in this CA prevents the Cooperator from implementing land management activities not described in the Agreement, as long as such actions do not affect the beneficial actions set forth in the Agreement, and the Cooperator implements the agreed upon conservation measures in the CA.

Emergency situations arising from natural disasters (e.g., fire, excessive rainfall, extreme drought, sustained extreme heat, insect infestations, or epidemic disease) may require the initiation of certain land management actions that may result in take of relict leopard frogs. The Cooperator will notify the Department within at least 5 working days of such a situation, and will make reasonable accommodations to the Department and/or the Service for survey and/or relocation of relict leopard frogs prior to initiation of the land management action responding to an emergency situation. Certain other urgent emergency situations such as the failure of water supplies, water delivery systems or pond structures, may occur outside of the control or intention of the Cooperator, which could result in the take of relict leopard frogs. Under such situations the Cooperator will notify the Department as soon as is practicable to allow the salvage and/or relocation of affected relict leopard frog individuals. Department acknowledges that survey and/or relocation may be impossible in certain urgent situations.

4.2 RESPONSIBILITIES OF THE PARTIES. The Cooperator and the Department agree to carry out certain responsibilities under this CA.

Cooperator:

- a. Manage aquatic habitats within the enrolled property to attempt to maintain water quality and other parameters necessary for the maintenance of relict leopard frogs, to the extent required under the terms of this CA.
- b. Inform the Department within three working days of finding any dead or accidentally killed relict leopard frogs.
- c. With reasonable advance notification, allow access to the enrolled lands by the Department and the Service to manage or monitor relict leopard frogs, release or remove relict leopard frogs, or to carry out other management activities as necessary.
- d. Inform the Department as soon as practicable of natural or human-caused emergency circumstances, such as storm events or failure of water delivery systems, which could negatively affect occupied aquatic or terrestrial habitats and could result in take of relict leopard frogs, and allow access to the Department for emergency salvage or relocation of affected individuals.
- e. Inform the Department at least 30 calendar days in advance of planned, otherwise legal activities including the modification or alteration of occupied habitats, which might reasonably be anticipated to result in the indirect take of relict leopard frogs on the enrolled property, to allow for removal of relict leopard frogs to other habitats within the enrolled property, or the removal of relict leopard frogs from the enrolled property.
- f. Assist the Department in compiling an annual report on activities related to relict leopard frog management and any activities that resulted in or may have resulted in incidental take of relict leopard frogs on the property.
- g. With reasonable advance notification, allow access to the enrolled lands by the Department or Service for purposes of ascertaining compliance with this CA.
- h. Follow guidelines provided by the Department for handling injured relict leopard frogs or carcasses of relict leopard frogs.
- i. Provide appropriate information on avoidance of incidental take of relict leopard frogs to other users of the property who may contact the animals in the pursuit of lawful recreational activities.
- j. Agree to consider new adaptive management recommendations that the Department may present to the Cooperator. Agreement to any new adaptive management recommendations is in Cooperator's sole and absolute discretion.

Department:

- a. Upon execution of the CA will authorize incidental take of relict leopard frogs as a result of lawful activities on the enrolled property for the term remaining on the federal 10(a)(1)(A) Enhancement of Survival permit and State of Nevada permits through issuance of a COI to the Agreement and a Letter of Take Authorization (LTA) to the Cooperator.
- b. Provide technical assistance to the Cooperator for management of relict leopard frog habitat, to the maximum extent practicable, when requested.
- c. Provide guidelines to the Cooperator for handling injured relict leopard frogs or carcasses of relict leopard frogs, and for avoiding incidental take during otherwise



- lawful recreational activities.
- d. Ensure the Cooperator is implementing the terms of the CA.
  - e. Provide appropriate age classes of relict leopard frogs for release on the enrolled property.
  - f. Provide reasonable advance notification to the Cooperator before any visit by Department staff to the enrolled property.
  - g. Compile an annual report with assistance from the Cooperator on activities required by this CA and/or related to relict leopard frog management and any activities that resulted in or may have resulted in incidental take of relict leopard frogs on the property. Annual reports, as described in the Agreement, are due to the Service by March 1<sup>st</sup> of each following year and copies shall be provided to the Cooperator.
  - h. Perform biological monitoring of relict leopard frogs on the property at least semi-annually.
  - i. Provide assistance for salvage or relocation of individual relict leopard frogs in the event of planned or emergency circumstances affecting occupied aquatic or terrestrial habitats which could result in indirect take of individual animals, following appropriate notification by the Cooperator.
  - j. If warranted, recommend procedures the Cooperator can take to avoid future incidental take based on incidental take described in past annual reports.
  - k. Will not impose any new requirements or conditions on, or modify any existing requirements or conditions applicable to Cooperator, except as stipulated in §8.1 of the CA and §13 of the Agreement.
  - l. To the extent such funding is authorized and available, may provide funding to Cooperator for implementation of conservation actions in accordance with the CA and Agreement.

## **5. AGREEMENT DURATION**

Obligations under this CA will be in effect for 15 years from the date it is executed by both the Cooperator and the Department. Upon signing of the CA, the Department will issue a COI to the Cooperator under the federal 10(a)(1)(A) Enhancement of Survival permit (TE76244B-0) the Department holds, and a State of Nevada permit or LTA, authorizing the incidental take of relict leopard frogs on the enrolled property. The COI will authorize incidental take of relict leopard frogs from the date of last signature below to 09/24/2045, the remaining duration of the 30-year term of the Department's permits at the time the COI is issued.

## **6. INCIDENTAL TAKE**

Take is defined as actions or attempted actions to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect listed species. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is further defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns including, but not limited to, breeding, feeding or sheltering. Incidental take is any take

of Federally-listed wildlife or State-listed wildlife and plants that is incidental to, but not the purpose of, otherwise lawful activities.

Under the terms of this CA, the Cooperator is authorized to make use of their enrolled property in any manner that does not result in take of relict leopard frog or reduction of occupied habitat beyond that described below. The COI will authorize incidental take of relict leopard frogs and their progeny resulting from lawful activities within the enrolled property, from the time this CA is signed until expiration of the Department's permits. Such uses may include, but are not limited to: operation of vehicles and maintenance equipment, building or fence construction, gardening, hunting, recreational fishing, farming, mowing, maintenance of landscaping and recreational facility infrastructure including irrigation facilities, commercial and non-commercial recreational activities or cultivation of agricultural crops. The COI will also authorize incidental take that may result from implementation of conservation actions on the enrolled properties for the relict leopard frog, such as habitat enhancement and restoration activities, inventory and monitoring activities, and translocation of frogs, eggs, and/or larvae. The Cooperator will be covered for mortalities as a result of natural predators. The Cooperator may continue current land-use practices, undertake new ones, or make any other lawful use of the property, even if such use results in the take of relict leopard frogs or loss of occupied habitat as described in the Agreement. In the event of planned, otherwise legal activities including the modification or alteration of occupied habitats, which might reasonably be anticipated to result in the indirect take of relict leopard frogs on the enrolled properties, the Cooperator shall provide at least 30 calendar days' notice to the Department to allow for the removal of relict leopard frogs to other habitats within the enrolled property or the removal of relict leopard frogs from the enrolled property.

Relict leopard frogs have never inhabited the Springs Preserve, and there is no existing relict leopard frog population that could colonize and occupy the Springs Preserve other than through the deliberate introduction effort covered by this CA. Consequently, the Department and Cooperator have agreed to set the Baseline conditions of zero (0) relict leopard frogs and no habitat (0 acres) for the Springs Preserve.

The Agreement and associated Incidental Take Permit would authorize the Cooperator, and persons associated with the Cooperator, to incidentally take individual relict leopard frogs and their progeny as a result of activities associated with the return to Baseline conditions. Because the Baseline for the relict leopard frog at the Springs Preserve has been determined to be zero (0), activities that would result in a return to Baseline could include those activities that would reduce or remove all relict leopard frogs and all suitable habitats that have developed over the term of the Agreement.

The Department and Cooperator expect that the maximum level of take, defined herein as 100% of the relict leopard frogs on the Springs Preserve, authorized under this CA may never be realized because the Cooperator will implement avoidance and minimization measures to reduce the likelihood that take would occur. Additionally, the maximum level of take is not expected to be realized because, as identified in Part 4.2 of this Agreement, the Cooperator is required to notify the Department of any planned activity

that the Cooperator reasonably anticipates will result in take of relict leopard frogs at the Springs Preserve, including a return to Baseline conditions, and provide the Department the opportunity to capture and relocate any individuals that could potentially be affected. Incidental take of relict leopard frogs could occur in the form of capture as a result of these activities.

Cooperator is covered under this Agreement for activities including but not limited to:

- The Cooperator hosts visitors and has group events such as weddings, gatherings for non-profit groups, and educational field trips for schools. These visitors may walk, use bicycles, ride a passenger train, or other transportation devices on pathways located near the ponds.
- The Cooperator will manage associated drainages, the Meadows Detention Basin, the water distribution system, and the refugia ponds for multi-use needs of the Springs Preserve.
- The Cooperator will continue to use water sources that supply the ponds for a variety of different purposes at the Springs Preserve; water quality and levels in the ponds may vary.
- The Cooperator uses the Springs Preserve for groundwater pumping and associated well-field activities that include, but are not limited to, well operation and maintenance, well flushing, well drilling, and pump tests. Well-field operations may cause groundwater level declines, but any such declines would not directly affect pond water levels due to the lining systems of the ponds themselves.
- The Cooperator may undertake any and all activities associated with the operation and maintenance of water systems, equipment, and infrastructure used in the delivery of potable and non-potable water to various customers.
- The Cooperator may aerate, filter, and manage flows in and out of the ponds as needed for management of the ponds and the Springs Preserve.
- The Cooperator may drain the refugia ponds for maintenance activities including, but not limited to, repairing leaks, resealing concrete, removing invasive species, and enhancing ponds.
- The Cooperator may grade and re-contour existing access roads within the Springs Preserve, as needed for road maintenance and fire access purposes.
- The Cooperator may grade and re-contour existing trails within the property, and may construct new paved or unpaved trails for visitors to use.
- The Cooperator may construct additional pipelines and power lines, and will continue to operate and maintain such facilities.

- The Cooperator may extinguish fires or remove brush to prevent the spread of fires.
- The Cooperator may clear debris from the refugia ponds such as, but not limited to, tree limbs, leaves, cattails, bulrushes, aquatic plants, algae, and other detritus.
- In order to maintain public health and safety, the Cooperator may implement mosquito control measures in and around the ponds.
- The Cooperator may use herbicides or pesticides to control invasive and/or noxious weeds and invertebrate pests, as deemed necessary for the management of the Springs Preserve.
- The Cooperator may construct and maintain trails, bridges, and viewing platforms.
- The Cooperator may conduct research on the diet, genetics, growth, habitat, movements, physiology, reproduction, water quality, and/or survivorship of the Covered Species. The Cooperator shall maintain any permits required by the Department for research activities on the covered species.

As a result of these activities, incidental take could occur in the form of direct mortality or injury to eggs, larvae, juveniles, subadults, and/or adults through exposure, digging, stranding, planting, cutting, or trampling; as well as, accidental spills into the pond water or the presence of contaminants in source waters used to irrigate the ponds at the Springs Preserve, or any change in water levels of the ponds. Relict leopard frog juveniles, adults, and their progeny may not be shot, captured, collected, or otherwise directly “taken.” The Cooperator will have incidental take coverage for relict leopard frogs that could be taken as a result of the covered activities, including beneficial management activities and return to baseline conditions, at the enrolled property.

The Cooperator agrees to implement the following measures to avoid and/or minimize potential impacts to relict leopard frogs from the covered activities:

- The Cooperator will install interpretive signage informing visitors and event attendees frequenting the Springs Preserve trail system of the presence and protected status of the relict leopard frog in refugia ponds.
- If the Cooperator needs to use pesticides or other chemicals to manage the Springs Preserve, the Cooperator will select chemicals and applications to avoid or minimize adverse effects to the relict leopard frog.
- Periodic water quality testing will be performed; data on dissolved oxygen, pH, conductivity, and water temperature will be recorded. These data will be used to interpret the health of the pond ecosystems as part of an adaptive management strategy.

- If the Cooperator becomes aware of any contamination to water sources for the refugia ponds at the Springs Preserve, the Cooperator will inspect and test water samples, if necessary, coordinate with the local regulatory agencies, and/or use alternate sources of water for the refugia ponds. The Cooperator is developing alternative sources of water for these ponds, which may include but are not limited to urban run-off through existing drainage channels, well flushings, fire hydrants, adjacent irrigation systems, potable water, and existing or new groundwater wells.
- If the water supply becomes interrupted or the refugia ponds begin to leak, the Cooperator will take actions to attempt to maintain adequate water levels and flows in the refugia ponds that relict leopard frogs inhabit. Measures may include, but are not limited to, using water from groundwater wells, adjacent irrigation systems, and/or potable water.
- If the Cooperator needs to drain refugia ponds or determines that it is unfeasible to maintain adequate water levels and flows in the refugia ponds, the Cooperator will coordinate with the Department to either translocate the relict leopard frogs to more appropriate refugia ponds at the Springs Preserve, or notify the Department in advance so that the Department can relocate the relict leopard frogs.
- During any construction, operation, or maintenance activities, the Cooperator, or other associated personnel, will exercise due diligence to avoid or minimize negative effects to relict leopard frogs.
- Security patrols are conducted regularly throughout the Springs Preserve to protect the water supply and infrastructure. Security patrols will substantially reduce the potential for disturbance to relict leopard frogs and refugia habitat.

## **7. FUNDING**

Funding for management activities undertaken by the Cooperator will be the responsibility of the Cooperator and will be allocated in its sole discretion. Cooperator is not required to expend funds pursuant to this CA unless and until the Cooperator appropriates and commits funding for such expenditures in writing. Department will inform Cooperator of potential funding opportunities through State or Federal grant programs that may be relevant. Department may, with the agreement of the Cooperator, fund and/or undertake management activities on the enrolled property to benefit relict leopard frogs. Any such activities will be identified and detailed as an amendment to this CA.

## **8. TERMS AND CONDITIONS**

This CA is subject to all the terms and conditions laid out in the Agreement. It is also subject to the following additional terms and conditions:

**8.1. MODIFICATION OF COOPERATIVE AGREEMENT.** Department or Cooperator may propose modifications or amendments to this CA by providing written notice to the other party and obtaining their written concurrence. Such notice shall include a statement



of the proposed modification, the reason for it, and its expected results, as well as the proposed language for the modification. The parties will make their best efforts to respond to proposed modifications within 60 calendar days of receiving the notice. Proposed modifications will become effective upon the other Party's written concurrence.

8.2. TERMINATION OF THE COOPERATIVE AGREEMENT/COI BY THE COOPERATOR. As provided for in Part 8 of the Service's Candidate Conservation Agreement with Assurances (CCAA) final policy (64 *Federal Register* 32726, June 17, 1999), a Cooperator may, for good cause, terminate implementation of their CA before its expiration date, even if the expected benefits have not been realized. If the CA is terminated without good cause, however, the Cooperator is required to surrender their COI and LTA to the Department, thus relinquishing the Cooperator's take authority (if the species has become listed) and the assurances granted by the COI, LTA, and CCAA. A Cooperator is required to give 90 calendar days prior written notice to the Department of its intent to terminate the CA, and must provide the Department the opportunity to relocate relict leopard frogs within 60 calendar days of receiving such notice.

8.3. TERMINATION OF THE COOPERATIVE AGREEMENT/COI BY THE PARTIES. Either Party has the right to cancel the CA and the associated COI where the Cooperator is found to be in non-compliance with the terms and conditions of the CA. If a Cooperator is found to be in non-compliance, the Department will issue a written letter of non-compliance to the Cooperator. The Cooperator shall have sixty (60) days from receipt of the letter to rectify the non-compliance issue(s) working in cooperation with the Department. If the issue(s) is not resolved to the satisfaction of the Parties by mutual consent by the end of the 60-day period, the CA shall be declared null and void. At that point, the CA and the associated COI shall cease to be in effect.

8.4. SUCCESSION AND TRANSFER. This CA shall be binding on and shall inure to the benefit of the Parties and their respective successors and transferees, in accordance with applicable Federal regulations (50 CFR 13.24 and 13.25). The rights and obligations under this CA shall run with the ownership of the enrolled properties and are transferable to subsequent private property owners pursuant to 50 CFR 13.25. The Cooperator shall notify the Department of any transfer of ownership at least 90 calendar days prior to the intended transfer, so that the Department can attempt to contact the new owner, explain the responsibilities applicable to the property, explain the terms and conditions of the Agreement and CA, and determine whether the new landowner will become a Cooperator to the original CA, enter into a new CA, or cease enrollment under the Agreement.

Upon becoming a Cooperator, the new property owner will have the same rights and obligations with respect to the enrolled property as the original Cooperator. If the new property owner does not become a Cooperator, the new owner would neither incur responsibilities under the CA nor receive any assurances relative to Endangered Species Act Section 9 restrictions that might result from listing of the relict leopard frog. Cooperator shall allow the Department and the Service reasonable access to remove any

relict leopard frog individuals prior to change of ownership, if the new owner does not agree to become a Cooperator to the original CA or enter into a new CA.

8.5. REMEDIES. Each party shall have all remedies otherwise available to enforce the terms of the CA and the COI, except that no party shall be liable for money damages for any breach of this CA, any performance or failure to perform an obligation under this CA, or any other cause of action arising from this CA.

8.6. NO THIRD PARTY BENEFICIARIES. This CA does not create any right, interest, or cause of action for any member of the public as a third party beneficiary, nor shall it authorize anyone not a party to this CA to maintain a suit for personal injuries or damages or breach of this CA. The duties, obligations, and responsibilities of the Parties to this CA with respect to third parties shall remain as imposed under existing law.

## 9. NOTIFICATION

Communication and correspondence required by this CA should be directed to the addresses below. Names and addresses may be changed upon written notice to all Parties.

Las Vegas Valley Water District  
ATTN: Springs Preserve Manager  
1001 S Valley View Blvd  
Las Vegas, NV 89153

With a copy to:

Las Vegas Valley Water District  
ATTN: General Counsel  
1001 S. Valley View Blvd.  
Las Vegas, NV 89153

Nevada Department of Wildlife  
Supervising Biologist – Fisheries  
4747 Vegas Drive  
Las Vegas NV 89108

IN WITNESS WHEREOF, each party hereto has caused this Cooperative Agreement to be executed by an authorized official on the day and year set forth below their signature.

LAS VEGAS VALLEY WATER DISTRICT

By: John J. Entsminger  
John J. Entsminger, General Manager

Date: 2.7.17

APPROVED AS TO FORM:

By: Dana Walsh  
Dana R. Walsh, Deputy Counsel

Date: 1-18-17

NEVADA DEPARTMENT OF WILDLIFE

By: Tony Wasley  
Tony Wasley, Director  
Nevada Department of Wildlife

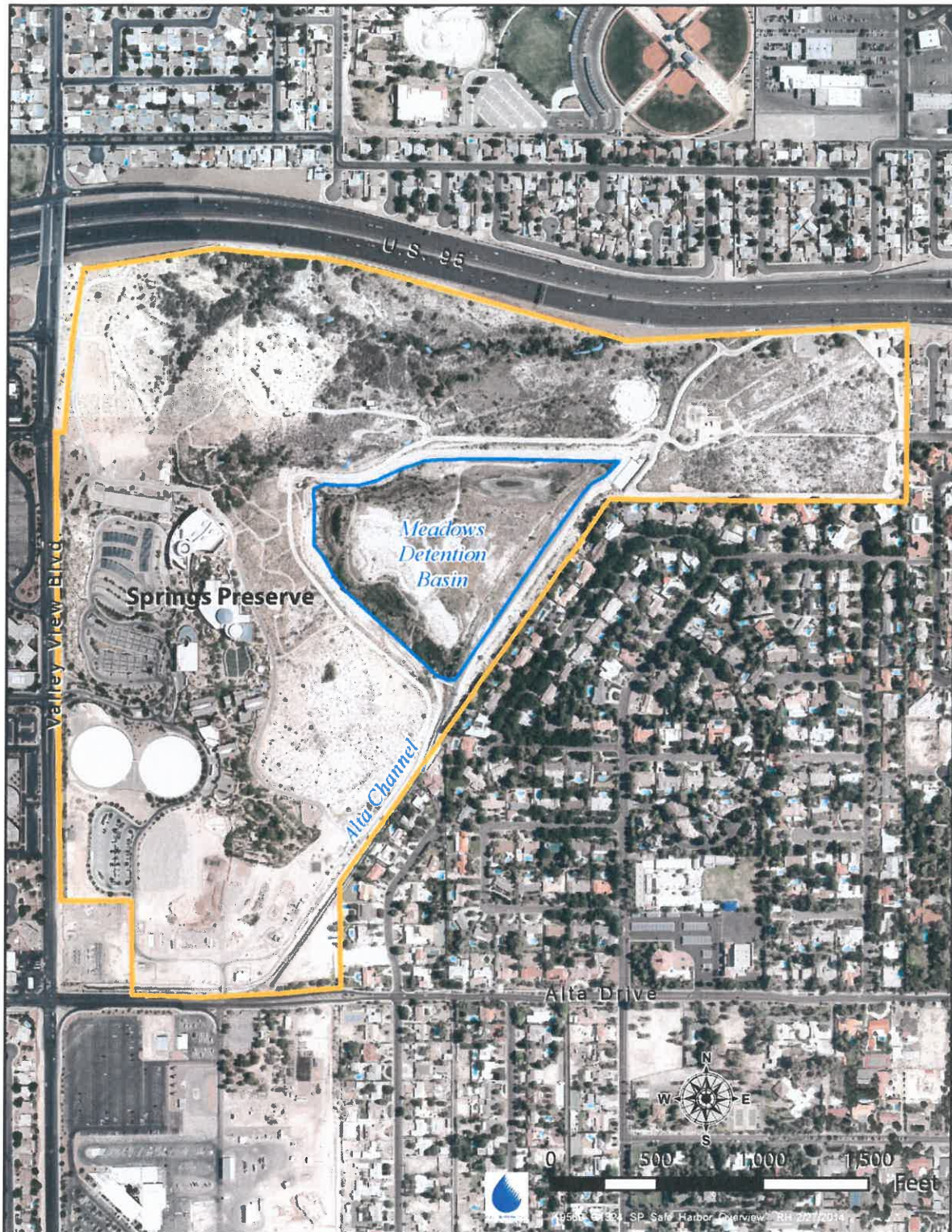
Date: 1/3/17

APPROVED AS TO FORM ONLY this 12<sup>th</sup> day of January, 2017

OFFICE OF THE ATTORNEY GENERAL OF NEVADA

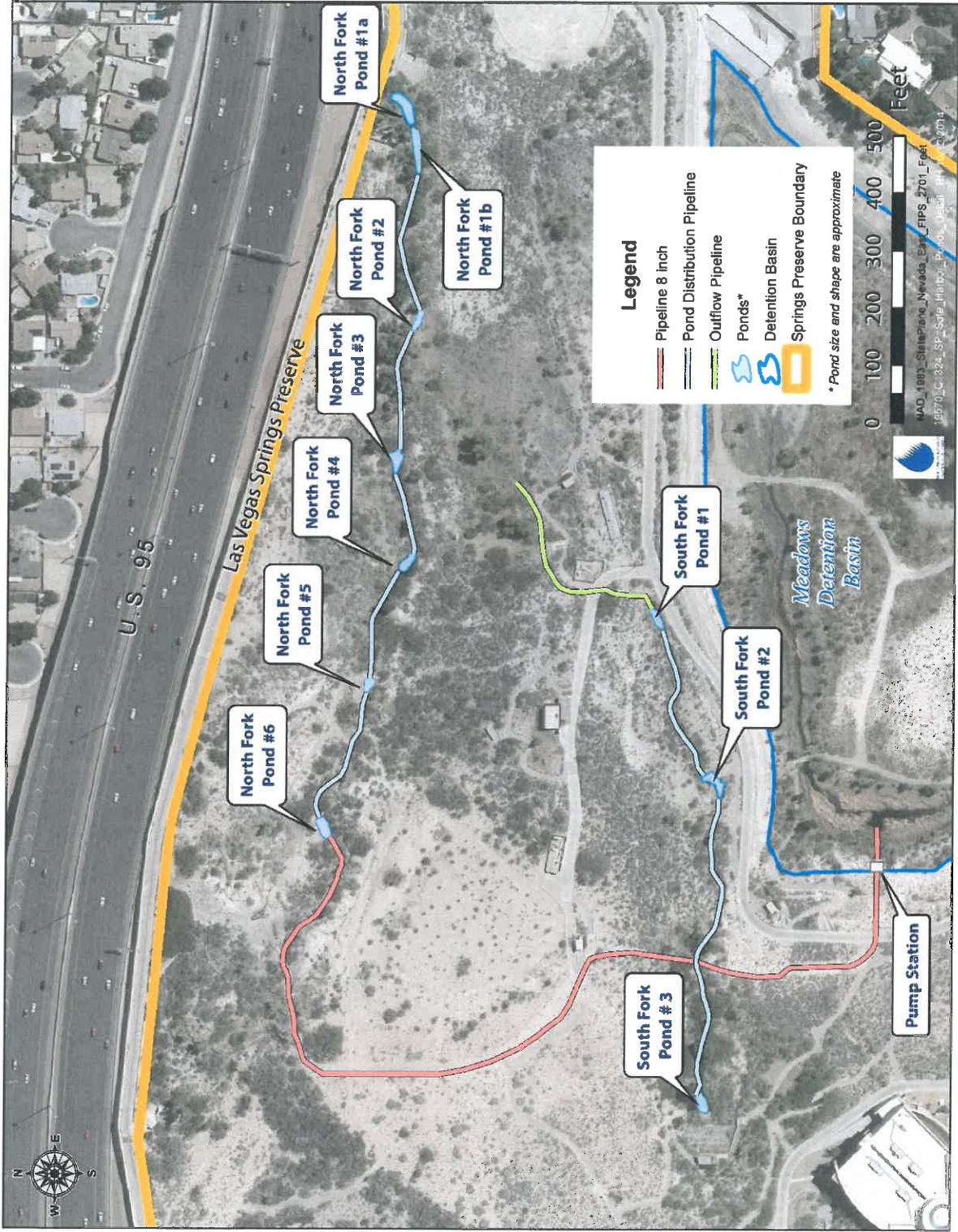
For:

By: H. B. Ward  
Deputy Attorney General



**Figure 1.** Location of the Meadows Detention Basin (blue line) within the Springs Preserve (orange line), Clark County, Nevada.





**Figure 2.** Location, size, and shape of ponds in the North and South forks of the historic Las Vegas Creek, Springs Preserve, Clark County, Nevada.





BRIAN SANDOVAL  
Governor

STATE OF NEVADA

## DEPARTMENT OF WILDLIFE

1100 Valley Road

Reno, Nevada 89512

(775) 688-1500 • Fax (775) 688-1595

TONY WASLEY  
Director

JACK ROBB  
Deputy Director

LIZ O'BRIEN  
Deputy Director

### PROGRAMMATIC CANDIDATE CONSERVATION AGREEMENT WITH ASSURANCES FOR THE RELICT LEOPARD FROG IN CLARK COUNTY, NEVADA

#### LANDOWNER CERTIFICATE OF INCLUSION #RLF-001

This certifies that the 180-acre Springs Preserve, located entirely within the City of Las Vegas in Clark County, Nevada (as shown on Figure 1) and owned by the Las Vegas Valley Water District (Cooperator), is included within the scope of the Section 10(a)(1)(A) permit issued by the U.S. Fish and Wildlife Service expiring on September 24, 2045, under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (Permit number TE76244B-0) and the Letter of Take Authorization (LTA) issued by the Nevada Department of Wildlife (NDOW) on 7 February, 2017 under the authority of NAC §503.093, and in effect for the duration of the Cooperative Agreement and for such period of time afterward to allow a return of the Springs Preserve to baseline conditions. The Permit and LTA authorize incidental take of relict leopard frogs related to certain activities by the Las Vegas Valley Water District as part of the Programmatic Candidate Conservation Agreement with Assurances for relict leopard frog within Clark County, Nevada. The holder of this Certificate is authorized to engage in any otherwise lawful activity on the above described property that may result in the incidental taking of relict leopard frogs subject to the terms and conditions of the Permit and LTA.

The following additional management activities would be beneficial to relict leopard frogs because they would create and maintain a refugium for the species. The Cooperator would be covered under this Agreement for covered activities, as described in the Landowner Cooperative Agreement, including but not limited to:

- Prior to entering into the Landowner Cooperative Agreement with NDOW (Agreement), the Cooperator implemented several components of habitat enhancement, protection, and restoration at the Springs Preserve that create suitable habitat for relict leopard frogs. These include but are not limited to: (1) the construction of an engineered straw bale wall along the entire northern boundary of the Preserve that serves as a thermal, sound, and refuse barrier to US Highway 95; (2) use of resin paving techniques on perimeter fire access roads to avoid hydrocarbon-based pavement run-off; (3) reduced the use of non-organic pesticides and herbicide use; (4) the construction of the Cienega wetland to serve as a biological filter for urban run-off entering the Meadows Detention Basin (Fig. 2); (5) installation of cable and split-rail fencing to reduce access by guests to sensitive resource areas; (6) removing invasive, noxious, non-native vegetation and replanting with appropriate native vegetation; (7) restoring approximately 90 acres of degraded meadow, riparian, mesquite bosque,

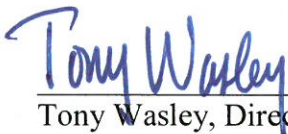


creosote-bursage, and saltbush communities; (8) the removal and complete restoration of gravel roads to increase habitat patch sizes and decrease ecological edge effects; and (9) construction of the infrastructure for ten engineered ponds within the historic Las Vegas Creek bed; as well as, the water intake infrastructure in the Meadows detention basin and adjacent pumping station. Furthermore, the Springs Preserve achieved ISO 14001 environmental certification in 2011. The Cooperator will maintain or update these components based on a number of factors, including but not limited to facility life spans, adaptive Springs Preserve management, new information, and unknown events.

- The Cooperator has created ten ponds in the historic Las Vegas Creek bed, one to three of which will be used initially as refugia for relict leopard frogs. As water availability allows, the number of ponds used as refugia could potentially expand during the period of the Agreement. The potential use of all ten ponds as refugia is covered by the Agreement.
- The Cooperator will coordinate the transplanting of relict leopard frogs from wild and/or experimental populations with the NDOW. The Cooperator is covered by the Agreement to translocate relict leopard frog eggs, larvae, juveniles, subadults, and adults between ponds at the Springs Preserve. The Cooperator will monitor the establishment of the populations in the refugia ponds at the Springs Preserve to help ensure success.
- The Cooperator will strive to maintain adequate water levels and flows in the refugia ponds at all times, but does not have control over the volume of available urban run-off, which could decrease unexpectedly. The Cooperator also does not have control over the quality of water entering the ponds. However, the Cooperator has put in place a number of measures to reduce (but not eliminate) the potential for contaminated water reaching the refugia ponds at the Springs Preserve: (1) aquatic macrophytes in a re-created Cienega ecosystem, within the Meadows Detention Basin, naturally filter the water; and (2) water is pumped from a vault covered in sand at the bottom of the second pond in the Cienega ecosystem, which protects the pond intake from certain contaminants that are not water soluble (e.g., oils). The Cooperator will be covered for take in the event that water levels decrease or contaminated water flows into the refugia ponds. In the event of a short-term water shortage, the Cooperator will pursue alternative means of obtaining water at the Springs Preserve, including but not limited to groundwater wells, adjacent irrigation systems, and/or potable water.
- The Cooperator will create and maintain pond habitat in an effort to sustain relict leopard frogs. The Cooperator may pursue a variety of habitat creation and maintenance activities, such as native plant transplantation and removal of excessive native algae, cattail, and/or bulrush growth, to ensure balanced levels of aquatic cover and open water suitable to all life stages of the relict leopard frog. The Cooperator may aerate the ponds to increase both circulation and availability of dissolved oxygen. The Cooperator would be covered for mortalities as a result of natural predators such as, but not limited to, raccoons (*Procyon lotor*), kingfishers (*Ceryle alcyon*), and various species of herons and/or egrets.

- The Cooperator will attempt to remove invasive species that might be introduced into the refugia ponds and adversely affect the relict leopard frog, such as bullfrogs (*Lithobates catesbeianus*) and crayfish.
- The Cooperator will assist NDOW in compiling an annual report on activities related to relict leopard frog management and any activities that resulted in or may have resulted in incidental take of relict leopard frogs at the Springs Preserve.
- The Cooperator hosts visitors, schools, and other groups for education and outreach activities, which in the past have reached as many as 250,000 visitors per year. Interpretive signage would be installed by the Cooperator to educate visitors frequenting the trails about native and listed species that occur at the Springs Preserve, including the relict leopard frog, the habitats where these species occur, and what can be done to benefit these species.
- The Cooperator may continue construction and maintenance of roads, trails, bridges, and viewing platforms, which may reduce visitor impact on the species.

This Certificate is only valid as long as the Cooperator fulfills their responsibilities as described in the Landowner Cooperative Agreement #LCA-R01 entered into by NDOW and Las Vegas Valley Water District on 7 February, 2017 and shall be in effect for the duration of that Cooperative Agreement and for such period of time afterward to allow a return of the Springs Preserve to baseline conditions.



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Tony Wasley, Director  
Nevada Department of Wildlife





**Figure 1.** Location of the Meadows Detention Basin (blue line) within the Springs Preserve (orange line), Clark County, Nevada.





**Figure 2.** Location, size, and shape of ponds in the North and South forks of the historic Las Vegas Creek, Springs Preserve, Clark County, Nevada.





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**DEPARTMENT OF WILDLIFE**

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TONY WASLEY  
Director

JACK ROBB  
Deputy Director

LIZ O'BRIEN  
Deputy Director

13 February, 2017

Springs Preserve Manager  
Las Vegas Valley Water District  
1001 S Valley View Blvd.  
Las Vegas, NV 89153

RE: Authorization for incidental take of protected species under provisions of NDOW  
Landowner Certificate of Inclusion # RLF-001

Dear Las Vegas Valley Water District:

This Letter of Take Authorization issued under authority of NAC § 503.093 authorizes incidental take of relict leopard frogs when such take occurs while engaged in any otherwise lawful activity on the 180-acre Springs Preserve, located entirely within the City of Las Vegas in Clark County, Nevada (Figure 1), as described in your Landowner Cooperative Agreement #LCA-R01 and subject to the terms and conditions of the Landowner Certificate of Inclusion #RLF-001, the Programmatic Candidate Conservation Agreement with Assurances for Relict Leopard Frogs in Clark County, Nevada, and Section 10(a)(1)(A) Permit Number TE76244B-0 issued by the U.S. Fish and Wildlife Service on September 24, 2015.

This Letter of Take Authorization is only valid as long as you fulfill your responsibilities as described in the Landowner Cooperative Agreement #LCA-R01 entered into by NDOW and Las Vegas Valley Water District on 7 February, 2017, and shall be in effect for the duration of that Cooperative Agreement and for such period of time afterward to allow a return of the Springs Preserve to baseline conditions.

Thank you for your interest in and involvement with these important activities supporting the conservation of Nevada's protected wildlife species.

Sincerely,

A handwritten signature in blue ink that reads "Tony Wasley".

Tony Wasley  
Director  
Nevada Department of Wildlife