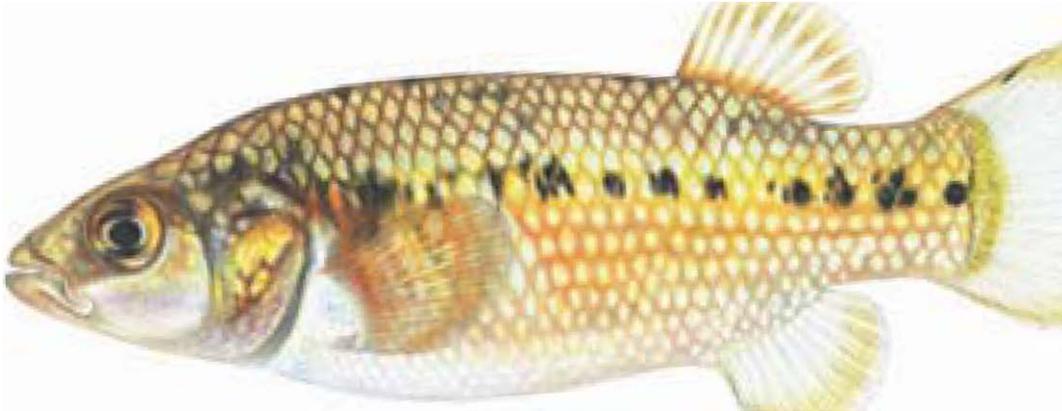


*SAFE HARBOR AGREEMENT  
WITH THE DUCKWATER SHOSHONE  
TRIBE TO RECOVER THE  
RAILROAD VALLEY SPRINGFISH  
(CRENICHTHYS NEVADAE)  
AT BIG WARM SPRING*



U.S. FISH AND WILDLIFE SERVICE  
DUCKWATER SHOSHONE TRIBE

APRIL 2007

***SAFE HARBOR AGREEMENT WITH THE DUCKWATER  
SHOSHONE TRIBE TO RECOVER THE RAILROAD  
VALLEY SPRINGFISH (CRENICHTHYS NEVADAE)  
AT BIG WARM SPRING***

This Safe Harbor Agreement (Agreement) is made and entered into on the \_\_\_\_\_ day of \_\_\_\_\_, 2007, by and among the Duckwater Shoshone Tribe (Applicant) and the U.S. Department of the Interior, Fish and Wildlife Service (Service); hereinafter collectively called the "Parties." This Agreement will serve as a Safe Harbor Agreement (Agreement) under which the Parties will implement recovery actions for the Railroad Valley Springfish (*Crenichthys nevadae*). This Agreement follows the Service's Safe Harbor Agreement final policy (FR 64:32717) and final regulations (FR 64:32706), and implements the intent of the Parties to follow the procedural and substantive requirements of section 10(a)(1)(A) of the Endangered Species Act (ESA).

The State of Nevada acting through the Nevada Department of Wildlife (Department) will be a cooperating agency under a Memorandum of Agreement with the Applicant. The Department will act to assist in the implementation of this agreement under the authority of section 4(d) of the ESA, as stated in 50 C.F.R. § 17.44(n).

## **1. INTRODUCTION**

The Safe Harbor program encourages proactive management to benefit endangered and threatened species by non-Federal landowners, by providing regulatory assurances that future property-use restrictions will not be imposed if those efforts attract endangered or threatened species to their enrolled property or result in increased numbers or distributions of listed species already present. This Agreement is a cooperative government to government effort to achieve biological goals for the covered species that are unlikely to occur on the enrolled property in the foreseeable future without such an Agreement. The Parties also intend the Agreement demonstrate that conservation of threatened species is compatible with current land-use practices. In return for voluntary conservation commitments, the Agreement will extend to the Applicant, assurances allowing future alteration or modification of Big Warm Spring that would return conditions to the negotiated elevated baseline conditions. Without this effort, the enrolled lands would not otherwise be utilized by the species.

The purpose of this Agreement is to promote the conservation, enhancement of survival and recovery of the threatened Railroad Valley springfish (*Crenichthys nevadae*) through the reintroduction of the species at Big Warm Spring within the boundaries of the Duckwater Shoshone Tribe Reservation. Railroad Valley springfish are susceptible to rapid population declines due to predation by non-native fish, habitat alteration, introduction of chemicals, or to unknown or stochastic factors, making establishment of new populations from the existing populations (donor populations) an essential conservation tool for this species. An important recovery task for Railroad Valley springfish at the Duckwater Shoshone Tribe's Big Warm

Spring is the repatriation of self-sustaining populations at springs and streams with suitable habitat that are devoid of non-native predators. Under this Agreement, the Applicant will make habitat available to Railroad Valley springfish and will assist with maintenance and management of this species and its habitat on enrolled properties over a period of 25 years.

This Agreement provides conservation benefits to the Railroad Valley springfish and give incidental take coverage to the Applicant for the species at Big Warm Spring. This species was listed as threatened with critical habitat pursuant to the Endangered Species Act of 1973 (ESA), as amended, because available habitat at each spring had decreased since the species' description in 1932 (51 Fed. Reg. 10857, March 31, 1986). Railroad Valley springfish critical habitat includes the six springs historically occupied by Railroad Valley springfish along with their pools, portions of the outflow streams and marshes, and a 15-meter (50-foot) riparian zone around all such areas within the following geographical areas:

- 1) Big Warm Spring – T. 13 N., R. 56 E., NE ¼ Sec. 31, SE ¼ Sec. 31, and NW ¼ Sec. 32;
- 2) Little Warm Spring – T. 12 N., R. 56 E., Sec. 5; and
- 3) North Spring, Hay corral spring, Big Spring, and Reynolds springs – T. 8 N., R. 55 E., SW ¼ Sec. 11, NW ¼ Sec. 14, SW ¼ Sec. 14, SE ¼ Sec. 15, NE ¼ Sec. 15, and SW ¼ Sec. 15 (51 Federal Register 10857).

The Service assigned the Railroad Valley springfish a recovery priority of 2C, indicating that this species has a high degree of threat and existing conflicts to recovery, but a high recovery potential. Therefore, the implementation of this Agreement is expected to yield benefits to recovery of the springfish.

When signed, this Agreement will serve as the basis for the Service to issue a permit under ESA section 10(a)(1)(A) that allows the incidental take of Railroad Valley springfish. This Agreement will authorize the Applicant to implement actions that will directly benefit Railroad Valley springfish and the recovery of the species. Incidental take is defined as take that is incidental to and not the purpose of, otherwise lawful activities and does not include shooting, capture or other direct take of animals or plants. Thus, the Applicant will be authorized to take Railroad Valley springfish that have increased above the elevated baseline established in this Agreement as a result of the Applicant's voluntary conservation activities. Although the Agreement and permits will authorize incidental take of Railroad Valley springfish associated with returning the enrolled property to its agreed-upon elevated baseline condition, the Parties anticipate that this level of take is unlikely to be realized.

## 2. COVERED SPECIES

2.1 COVERED SPECIES: This agreement covers the Railroad Valley springfish (*Crenichthys nevadae*), which is federally listed as a threatened species.

### 2.1.1. SPECIES DESCRIPTION:

**Railroad Valley springfish:** The springfish genus *Crenichthys* includes Railroad Valley springfish and five subspecies of White River springfish (*C. baileyi*). The genus and the

Railroad Valley springfish species were described from specimens collected in 1930 from Big Warm Spring, Duckwater, Nye County, Nevada (Hubbs 1932). The genus *Crenichthys* is related to the killifish genus *Empetrichthys*, but differs in coloration, placement of the dorsal and anal fins, and several morphological features related to feeding habits (Hubbs 1932). In 1980, the common name of the genus *Crenichthys* was changed from “killifish” to “springfish” in deference to selection of the genus name based on the species’ occupation of spring habitats (Hubbs 1932; Bailey, et al. 1970; Robins, et al. 1980; Williams and Wilde 1981).

Railroad Valley springfish and White River springfish occupy adjacent drainage systems that have no current hydrologic connections. The two species can be identified by differences in coloration. Both species vary from yellow to olive to gray on the top half of the body with a dark stripe extending along the dorsal surface from snout to tail, and are silver on the bottom half (La Rivers 1962). Railroad Valley springfish; however, possess a single row of lateral dark spots down the length of their sides, whereas White River springfish have two rows of lateral spots (Hubbs and Miller 1941).

The Railroad Valley springfish has a chunky body that is two-thirds as wide as deep and a very large head. This fish lacks pelvic fins, while its dorsal and anal fins are set far back, and pectoral fins are set low but with a vertical base. The average total length of Railroad Valley springfish varies between 23 and 39 millimeters (0.9 and 1.5 inches), depending on the spring it occupies, although individuals may attain a total length exceeding 70 millimeters (2.7 inches). Railroad Valley springfish from Big Warm Spring and Little Warm Spring are generally larger than those from Big Spring and Chimney Spring. Big Warm Spring fish are the largest overall with an average total length of 34.5 millimeters (range 13 millimeters to 72 millimeters) (1.4 inches; range 0.5 to 2.8 inches). Fish in the Big Spring population averaged 24.2 millimeters total length (range 10 millimeters to 48 millimeters) (1 inch; range 0.4 to 1.9 inches) (Williams 1981).

#### *2.1.2. SPECIES DISTRIBUTION AND POPULATION STATUS:*

The Railroad Valley springfish is the only fish species native to the thermal spring systems of Railroad Valley, Nye County, Nevada. Railroad Valley springfish currently occupy five of the six known historical habitats, as well as four additional habitats outside the species’ historical range.

Pluvial (ancient) Lake Railroad encompassed as many as six present-day valleys, including Railroad, Reveille, Hot creek, Little Fish Lake, and Sand Springs Valleys, and an unnamed valley containing pluvial Lake Snyder (Snyder, et al. 1964). Desiccation of Lake Railroad isolated Railroad Valley springfish into six thermal springs distributed in two areas of Railroad Valley; Big Warm Spring and Little Warm Spring were isolated in the northern portion of Railroad Valley on the Duckwater Shoshone Indian Reservation at Duckwater, Nevada and Big Spring, Reynolds Springs, Hay Corral Spring, and North Spring are approximately 43 kilometers (26.7 miles) south of Duckwater at Lockes, Nevada. The four springs at Lockes are located on the Department’s newly acquired Locke’s Ranch Wildlife Management Area (LRWMA).

The Applicant entered into a Memorandum of Understanding (MOU) with the Service in 2003 to collaborate and cooperate in the recovery of the Railroad Valley springfish. The MOU allowed the Service to survey Big Warm Spring, Little Warm Spring and several additional unnamed springs throughout the reservation. Very little population status information is available for the Railroad Valley springfish populations that occur on the Duckwater Indian Reservation. The Big Warm Spring population was described as “teeming” and “abundant” during the 1930’s, but declined to “exceedingly rare” between 1981 and 1982, following modifications to important habitat, the introduction of nonnative fishes and the installation of a catfish rearing facility. The species persisted in the Big Warm Spring in extremely limited numbers for over 10 years until the accidental introduction of red-bellied tilapia (*Oreochromis zillii*) occurred in the late 1990’s. Following several surveys between 2003 and 2005, the Department and the Service were able to confirm the extirpation of springfish at Big Warm Spring. The Little Warm Spring population of springfish was estimated at 2,267 adults during the summer of 2006. However, the bulk of the population is located at the spring source and immediately downstream in a modified irrigation channel. Surveys conducted in 2003, 2004, and 2005 determined that springfish were present at previously unknown locations on the reservation. These springs have been subsequently termed as the School Spring and Sugar Shack Springs. Limited populations of springfish thrive in the headwater pools and outflows of these springs as all two of these springs flow at less than 2 cubic feet per second.

Railroad Valley springfish are present at all four historic habitats at the LRWMA. The Department estimated approximately 1,400 fish persist at Big Spring, 700 springfish at North Spring, 1,200 fish at Hay Corral Spring and only 280 fish were estimated for the Reynolds Spring. Restoration of spring and outflow habitat will be implemented in 2007 to improve conditions, connectivity and population sizes at all four sites.

Four additional Railroad Valley springfish populations have been established in Nevada outside of the species’ historical range (Service, 1997). In 1947, the Department released Railroad Valley springfish into ponds on private property at Sodaville, Mineral County, Nevada. The transplant occurred because of the possibility that largemouth bass would be released in historical Railroad Valley springfish habitats. Railroad Valley springfish occupy the southernmost of the two spring groups at Sodaville, however, the populations have declined as open water habitat became overgrown with emergent aquatic vegetation. The private landowner has denied access to conduct surveys in recent years.

In 1977, a population of Railroad Valley springfish was discovered in an unnamed warm spring on private property in Hot Creek Canyon, Nye County, Nevada, presumably the result of an unauthorized transplant. This population is periodically monitored and continues to persist.

In 1978, Bureau of Land Management and the Department released springfish from Big Spring into three ponds created at Chimney Spring, 10 kilometers (6.2 miles) south of Lockes. This population of springfish has had occasional setbacks such as the spring source temporarily drying in 1981. In May 1988, cattle entered Chimney Spring livestock enclosure and severely trampled the berms separating the three ponds. However, the population rebounded after the Department repaired the ponds in 1989.

In 1992, the Department reported a fourth population of Railroad Valley springfish on private property at Warm Spring near the junction of U.S. Highway 6 and Nevada Highway 75, Nye County, Nevada.

### *2.1.3. THREATS TO THE SPECIES:*

Principal threats to the Railroad Valley springfish include the introduction of nonnative aquatic species, alteration of the spring sources and outflows for agricultural practices, alteration of habitats through impoundment and channelization, fragmentation of habitat and loss of connectivity between springs, invasive noxious weed introduction, and ground water depletion.

### *2.1.4. SPECIES RECOVERY ACTIONS:*

A recovery plan for the Railroad Valley springfish was finalized on March 17, 1997 (USFWS 1997). The recovery plan objectives and criteria for delisting this species are: to recommend measures needed to improve and secure the species' status so that it may be removed from the Federal list of endangered and threatened species. Railroad Valley springfish may be considered for delisting when the following criteria are met: 1) All six historical spring habitats are protected from adverse modifications through conservation agreements, easement, or fee title acquisitions; and 2) at least 21,000 adult Railroad Valley springfish are present among the six springs, with each population containing at least 1,000 adults and documented annual reproduction and recruitment, for 5 consecutive years.

The Railroad Valley Recovery Implementation Team (RRVRIT) was established in 2000 to provide for consensus based decision making relative to the recovery of the Railroad Valley springfish. The RRVRIT membership consists of the Department, the Service, Applicant, U.S. Geological Survey, Biological Resources Division and Water Resources Division, Bureau of Land Management, Nevada Natural Heritage Program, Nye County Commission, and the Southern Nevada Water Authority. The RRVRIT identifies actions, provides range-wide guidance and is actively implementing recovery actions for the springfish on Tribal, Departmental and willing private landowner's lands.

**2.2 IMPORTANCE OF TRIBAL LAND:** Railroad Valley springfish require Big Warm Spring to achieve the recovery goal of range wide population estimates of 21,000 individuals. Big Warm Spring, the largest of the six historic habitats, is 1.5 miles/km in length with 15.4 cubic feet per second of water flowing from the spring source. The recovery criteria specify that Big Warm Spring contribute to the overall recovery goal of providing habitat for a minimum of 1,000 fish. Big Warm Spring is also designated as critical habitat and currently provides all of the constituent elements including clear, unpolluted thermal spring waters ranging in temperature from 29° to 36° C (84°-97° F) in pools, flowing channels, and marshy areas with aquatic plants, insects, and mollusks. While population estimates were never obtained for Railroad Valley springfish when they inhabited Big Warm Spring, the RRVRIT estimates that Big Warm Spring will provide ample habitat for an estimated 2,500 to 5,000 individuals. Therefore the

Applicant's land, specifically Big Warm Spring, is crucial to the recovery of the Railroad Valley springfish.

### **3. DESCRIPTION OF ENROLLED PROPERTY**

The enrolled property is the area over which Safe Harbor assurances apply and on which incidental take of the covered species is authorized. The Parties reasonably expect that the covered species may occupy all or a portion of aquatic habitats on the enrolled property as a result of management actions undertaken through this Agreement.

The enrolled lands hereinafter termed Big Warm Spring, are located at T. 13 N., R. 56 E., NE ¼Sec. 31, SE ¼ Sec. 31, and NW ¼ Sec. 32 in Nye County, Nevada. Historically, the property surrounding Big Warm Spring and the associated outflow have been heavily grazed by cattle and horses, used to support an aquaculture facility, modified for agricultural irrigation facilities, and utilized by individuals who sought hot-springs and other recreational opportunities. Habitat restoration and non-native fish eradication activities were implemented at Big Warm Spring during 2005 and 2006 through the Service's Partners for Fish and Wildlife, Tribal Wildlife Grants and Tribal Landowner Incentive Programs, the Department's Fisheries Bureau, and the Natural Resources Conservation Service's Wildlife Habitat Incentives Program. The newly constructed channel, irrigation pipeline intake, wetland diversion intake, and project details are in Figure 1. A newly constructed fence surrounds approximately 170 acres of upland, spring, and stream habitat that constitutes the enrolled lands. Within the fenced boundaries, approximately 75 acres of wetlands (the "dry lakes") receive water through the newly constructed wetlands diversion intake along the Big Warm Spring outflow. The Big Warm Spring pool is approximately 18 meters in diameter and the water flows into a single thread channel from the source pool downstream approximately 1.5 miles west to the bluff, flowing over a natural waterfall approximately 30 feet in height where it (Duckwater Falls) flows into Duckwater Creek (Figure 1). The channel was constructed with width to depth ratios of 5.4 in the upper reach, 5.8 in the middle reach, and 9.0 in the lower reach where it flows to Duckwater Falls. Big Warm Spring is the largest spring in Railroad Valley with a discharge that has varied from 14 cubic feet per second (cfs) in 1912 to 15.3 cfs in 2005. Water temperature at the spring pool varies between 30° and 33° Celsius (C) (86° and 91° Fahrenheit (F)). Along the outflow, there are two diversion intakes located approximately 200 meters from the spring pool (refer to Figure 2). Irrigation Diversion #1 is able to divert eight cubic feet per second and transports water approximately 150 meters to an open water channel that is 400 meters in length. A water meter is installed within this pipe to determine the amount of water flowing in the pipe which is capable of transporting a maximum of 8 cfs of water. At the end of this open water channel, the water flows into Irrigation Diversion #2 which is capable of transporting a maximum of 8 cfs of water. This underground pipeline functions as the Duckwater Shoshone Tribe's primary irrigation source. The Wetland Diversion structure is located downstream and directly adjacent to the irrigation pipeline diversion. This structure is designed to transport no more than 8 cfs of water. During the winter, 8cfs of water will be diverted to the "dry-lakes" or wetlands to honor the Tribe's water rights decree and restore approximately 60 to 65 acres of seasonal wetlands. Three and one half miles of fencing protect the spring source and the outflow from cattle and vehicular traffic for the entire 1.5 miles to Duckwater Falls. In addition, two wooden

deck/platforms and a narrow gravel trail were constructed to provide opportunities to view aquatic species at Big Warm Spring.

#### **4. ELEVATED BASELINE DESCRIPTION FOR RAILROAD VALLEY SPRINGFISH**

Baseline determination is either described as a minimum number of individuals or minimum amount or quality of habitat that is provided for the reintroduction of the Railroad Valley springfish. This Agreement is intended to meet the recovery goals for the species which lended itself to the negotiation of an elevated baseline. The elevated baseline is the number of Railroad Valley springfish required for recovery of the species. Proper determination of elevated baseline requires examination of the status of the species at Little Warm Spring and other unnamed springs on the Reservation. In addition, the recovery goals stated in the Recovery Plan need to be addressed in order to properly establish an elevated baseline (USFWS 1997). The recovery goals state that a minimum of 21,000 adult Railroad Valley springfish must be present among the six historic springs, Big Warm Spring, Little Warm Spring, Hay Corral Spring, Reynolds Spring, North Spring and Big Spring, with each population containing at least 1,000 adults and documented annual reproduction and recruitment for 5 consecutive years. Railroad Valley springfish were extirpated at Big Warm Spring in the late 1990's and currently Big Warm Spring is devoid of native fishes. Little Warm Spring currently supports 2,248 fish in less than 300 meters of stream channel with a water output of less than 1cfs. Big Warm Spring provides the largest available predator-free habitat for recovery of the springfish with 15 cfs of water flow available for 500 meters of stream and at least 7 cfs of flow maintained for another 1000 meters downstream to Duckwater Falls. Historically, population numbers were only described as "teeming and abundant" at Big Warm and Little Warm Springs and were never estimated at Big Warm Spring prior to habitat modification and non-native species introductions in the 1970's therefore it is not known how many fish Big Warm Spring can viably support in the future. Therefore, the Applicant and the Service have negotiated an elevated baseline population estimate of 3,000 Railroad Valley springfish at Big Warm Spring and its associated outflow for the term of this agreement. This estimate is based upon population estimates of similar habitats, like Little Warm Spring, that are currently occupied. This estimates more than exceeds the minimum number of fish required to meet the recovery goals, yet it is reasonable given the actions that will be implemented by the Applicant in the long term.

#### **5. RESPONSIBILITIES OF THE PARTIES**

The responsibilities of the Parties will be to work cooperatively on other issues as necessary to further the purposes of the Agreement. Moreover, nothing in this Agreement shall limit the ability of Federal and State conservation authorities to perform their lawful duties, and conduct investigations as authorized by statute and by court guidance and direction. Additionally, nothing in this agreement shall limit the ability of the Applicant to perform its lawful duties as authorized by Tribal laws, ordinances, and resolutions.

Specific responsibilities of Parties to this Agreement are as follows:

Applicant (Tribe):

- a) Allow the Service access to the enrolled lands for Railroad Valley springfish reintroduction and for monitoring of permit compliance, habitat conditions, and populations status.
- b) Maintain working relationships with the Service to facilitate cooperative adaptive management strategies for springfish recovery.
- c) Monitor annually and maintain fencing, interpretive facilities, irrigation intake, wetlands intake, and vegetation within the identified project area.
- d) Apply for Federal funding programs available to Native American Indian Tribes that provide technical and financial assistance for implementation of conservation actions for listed and unlisted species.
- e) Report annually to the Service regarding take and population status of Railroad Valley springfish throughout Tribal lands at Big Warm Spring.
- f) Divert no more than 8 cfs of water from the Big Warm Spring outflow through Irrigation Diversion #1 and #2 from April 15th to October 15th. Between October 16th and April 14th, 8 cfs of water will be diverted to the “dry lakes” through the Wetlands Diversion along the Big Warm Spring channel to restore seasonal wetlands on the bluff.
- g) Ensure that the agricultural irrigation and wetland diversion intakes are not open concurrently. Only one diversion may be open and used during any given time period based on the timing of the irrigation season.
- h) Trap and move isolated Railroad Valley springfish from the “dry lakes” wetland complex and the irrigation slough and return them to the Big Warm Spring springpool or outflow channel in cooperation with the Service.
- i) Monitor Big Warm Spring and the associated outflow to ensure that non-native fish species have not invaded or been introduced to designated critical habitat.
- j) Provide educational opportunities regarding the importance of recovering Railroad Valley springfish to Tribal members and visitors of Big Warm Spring through interpretive facilities, brochures, scheduled classes, and school curriculums. Specifically, the Applicant will highlight the importance of preventing inadvertent introductions of non-native fish species such as channel catfish, tilapia, largemouth and smallmouth bass, white crappie, and any other warm-water fish and invertebrate (lobsters, crayfish) species.
- k) Ensure that no aquaculture facilities will be developed, planned, or constructed within the designated critical habitat at Big Warm Spring and the stream channel from the spring source to Duckwater Falls (Figure 1). Specifically, the Applicant

will not culture non-native warm water fish species such as channel catfish, tilapia, largemouth and smallmouth bass, white crappie, or any other warm water fish or invertebrate (lobsters, crayfish) species.

- l) Ensure that livestock (cattle and goats) are not allowed to graze within the Big Warm Spring Exclusion Fence (Figure 1) for a minimum of four years from the date of this Agreement. Upon the end of the four-year “rest period”, a grazing management plan will be developed and implemented based on adaptive management strategies in this Agreement.
- m) Request technical assistance from the Service and other qualified partners to collaboratively develop a grazing management plan for the 157 acres within the boundaries of the Big Warm Spring fencing boundaries.
- n) Manage invasive noxious weeds, utilizing livestock and/or chemical treatment, within the designated critical habitat boundaries of Big Warm Spring in conjunction with Service recommendations based on safe pesticide use practices.

Service:

- a. Issue a permit to the Applicant in accordance with ESA section 10(a)(1)(A) authorizing incidental take of the covered species as a result of lawful activities within the enrolled property upon execution of the Agreement and satisfaction of all other applicable legal requirements. The term of the permit will be 25 years except as otherwise provided by this Agreement.
- b. Provide technical assistance to the Applicant to the maximum extent practicable, when requested, and provide information on Federal funding programs that the Service can provide to the Applicant.
- c. Provide a minimum of 10 working days advance notice to a designated tribal representative prior to accessing Big Warm Spring to conduct surveys, project monitoring, and tours.
- d. Ensure the Applicant is implementing the terms of the Agreement.
- e. Assist and train the Applicant with biological monitoring and management activities if assistance is requested and/or needed.
- f. Provide Service personnel for habitat restoration/management technical assistance, grant writing guidance, development of Railroad Valley springfish management strategies, and biological expertise.
- g. Recommend procedures for the Applicant to avoid future take based on any take described in past annual reports, if warranted.

- h. Work with the Applicant on potential baseline adjustments, new management actions, and adaptive management plans as necessary.

## 6. MANAGEMENT ACTIVITIES FOR RAILROAD VALLEY SPRINGFISH

The primary objective of this Agreement is to aid in the recovery of Railroad Valley springfish and to assist in the re-establishment of self sustaining, wild populations. In order to accomplish this, it is essential that the Applicant and the Service work together to provide suitable habitat and positive stewardship for sites to be used for self sustaining populations of Railroad Valley springfish. Management activities that are undertaken will result in historic critical habitat at Big Warm Spring becoming suitable for the re-establishment of Railroad Valley springfish. Until Railroad Valley springfish are placed on the enrolled property for purposes of population recovery, the Applicant will have no responsibilities under this Agreement except to implement those specific actions, including maintenance of habitat quantity and quality, agreed to in this Agreement.

The Applicant and the Service may collaboratively decide to remove any or all Railroad Valley springfish from Big Warm Spring as a result of adversely changing habitat conditions. Additional management actions may be carried out on the enrolled property to enhance or improve Railroad Valley springfish habitats and population viability and will be conducted by the Applicant and the Service, and, when circumstances allow, the Department. The net effect of these management activities will be to increase the quality of habitats and the ability to support a healthy, self-sustaining population of Railroad Valley springfish.

Specific management actions are:

- *Introduce Railroad Valley springfish at Big Warm Spring and the associated outflow to establish a viable population which will contribute to the goals of recovery and the survival of the species.*

The Agreement would involve movement of no more than 10 percent of the Little Warm Spring, School Spring, and Sugar Shack Spring populations to Big Warm Spring. Fish will be collected and introduced during the spring and summer of 2007, 2008, 2009, and 2010. Annual population estimates of springfish at Little Warm Spring, Sugar Shack Springs, and School Spring will be conducted to determine the number of fish that will be translocated to Big Warm Spring.

Subsequent introductions of Railroad Valley springfish to Big Warm Spring from Little Warm Spring, School Spring, and Sugar Shack Springs will occur in following years until a minimum of population size of 1,000 individuals is achieved. If the introduced population at Big Warm Spring does not reach 3,000 individuals by 2008, the Service will make a decision regarding the appropriate course of action. Fish mortality between introductions will be compensated for subsequent introductions through 2010. No more than 10 percent of the donor populations will be collected at any time. All subsequent translocations of Railroad Valley springfish on Tribal lands must be coordinated and planned through the cooperative process with the Service.

- *The Service will conduct and train Tribal personnel to conduct surveys, monitor habitat conditions and translocated Railroad Valley springfish for establishment or enhancement of new populations.*

The Service will bi-annually conduct and train designated Tribal personnel to monitor the Railroad Valley springfish population and habitat conditions at Big Warm Spring. Prior to conducting field surveys, the Service will provide a minimum 10 working days notification to designated Tribal personnel prior to entering the Applicant's property. Railroad Valley springfish will be counted and reproduction will be verified and documented. In addition, the presence of non-native fish or amphibians will be assessed and documented. Violations of the conditions put forth in this document will be reported, in writing, within 10 working days to the Nevada Fish and Wildlife Office in Reno. The Applicant will submit an annual written report on the population status and habitat conditions will be submitted by the Applicant to the Service. Historic range and sub-population genetic diversity are among the factors that will be used to evaluate future translocations of Railroad Valley springfish. Translocation of Railroad Valley springfish from or to Big Warm Spring, per approval by the Service, and the Department if practicable, will also be pursued if an imminent threat to the population's continued existence is detected. Factors that might pose an imminent threat to the Big Warm Spring population include, but are not limited to disease, accidental contamination of the spring or outflow, or the invasion of non-native fish species.

- *Notification requirement: the Applicant will notify the Service either verbally or in writing, a minimum 30 days prior to, or per Service approval, upon a sufficient amount of time to allow for salvage of fish) of any plans to implement the incidental take permit or alteration in land-use activities which may result in take of Railroad Valley springfish.*

Upon issuance of the take permit, the Service in conjunction with the RRVRIT will assist the Applicant, if requested, in removing and translocating springfish that have been isolated either in the open-water portion of the irrigation diversion ditch or in the "dry-lakes" wetlands. Springfish will be relocated to the Big Warm Spring or a site deemed appropriate by the Service, per criteria already set forth in this document using the protocol described in Appendix A. The notification will allow the Service an opportunity to capture and relocate the affected individuals, thereby minimizing the impact of the authorized take.

The Applicant will manage the irrigation diversion and "dry-lakes" wetland intakes in accordance within negotiated timeframes and Railroad Valley springfish conservation measures. Irrigation Diversion #1 and #2 will be opened for agricultural irrigation purposes from April 15th to October 15th of every year. At the end of each irrigation season, the Applicant will close Irrigation Diversion #1 and #2, contact the Service, and salvage all Railroad Valley Springfish that become trapped in the open water portion of the irrigation ditch between Irrigation Diversion #1 and Irrigation Diversion #2. Springfish will be relocated at the Big Warm Spring and the associated outflow.

On October 16th, Irrigation Diversion #1 and Irrigation Diversion #2 will be turned “off” and the Wetlands Diversion will be turned “on” to allow 8 cfs of water to inundate the “dry-lakes” area of the enrolled lands. The “dry-lakes” will be flooded from October 16th to April 14th each year to honor the Applicant’s water rights decree which requires water to be utilized for the wetlands. On April 15th of each year, the Applicant will turn the Wetlands Diversion “off” before turning Irrigation Diversion #1 and #2 “on”. The Applicant will contact the Service to remove and relocate stranded springfish from the “dry-lakes” area to the Big Warm Spring and its associated outflow unless the Parties agree to allow the fish to remain in the “dry-lakes” because they remain full for the duration of the agricultural irrigation season.

Once a designated Tribal employee has been trained by qualified species biologists from the Service to relocate and identify fish species, they can relocate springfish without guidance or assistance from the Service.

- *Emergency situation arising from natural disasters and/or invasion of non-native fish species.*

Emergency situations arising from natural disasters and sabotage (e.g., fire, excessive rainfall, flood, extreme drought) may require initiation of certain land management actions that may result in take of Railroad Valley springfish. Examples of land management actions could include ditch cleaning, diversion of excess water, road maintenance, fence maintenance, and flood management practices. The Applicant will notify the Service within 10 working days of such a situation, and will make reasonable accommodations to the Service for survey and/or relocation of Railroad Valley springfish prior to initiation of the land management action. Certain other emergency situations that could result in the take of Railroad Valley springfish such as the deliberate destruction of designated critical habitat, sabotage by the general public, failure of water supplies or water delivery systems, may occur outside of the control or intention of the Applicant.. Under such situations the Applicant will notify the Service as soon as is practicable to allow the salvage and/or relocation of affected Railroad Valley springfish individuals. The Service acknowledges that survey, and/or relocation may be impossible in certain urgent situations.

## **7. NET CONSERVATION BENEFIT**

The biological goal of this Agreement is to aid in the conservation and recovery of Railroad Valley springfish within its native range, in Big Warm Spring, for the purpose of reintroducing, establishing and augmenting wild populations and maintaining persistent adult populations in long-term environments. This goal supports recovery plan goals and supplemental recovery goals, and tasks identified by the RRVrit. The Parties reasonably expect that this Agreement will result in the availability of Big Warm Spring and the associated outflow stream channel for the recovery of a self sustaining population of Railroad Valley springfish to its native historic habitat at Big Warm Spring. Because of environmental variables, the population size of Railroad Valley springfish may be less or greater than is anticipated in any specific year. However, as long as management activities are carried out and restored habitats persist, enrolled lands will benefit the conservation of Railroad Valley springfish. The Parties anticipate this Agreement will result in an increased number and/or distribution of the covered species, and/or an increase

in the total area of occupied suitable habitat, within the enrolled lands. Without this cooperative government to government effort, the Applicant's enrolled properties would not provide suitable historic and critical habitat to establish a self-sustaining population of Railroad Valley springfish. This Agreement will also provide an example of a mutually beneficial relationship between government agencies and the Applicant to benefit threatened species, and evidence that such species can coexist with current land-use practices. The Parties expect that through the implementation of this Agreement, Railroad Valley springfish could potentially be de-listed should the Parties maintain the terms of this agreement. Therefore, the cumulative impact of this Agreement and the activities it covers, which are facilitated by the authorized take, will provide a net conservation benefit to Railroad Valley springfish.

The Applicant will cooperatively and voluntarily manage the enrolled property to produce a cumulative net conservation benefit to the covered species, by implementing conservation measures to increase species populations by reintroducing Railroad Valley springfish at Big Warm Spring and to create, enhance and maintain suitable habitat for all life stages of the species. The net conservation benefit will be sufficient to contribute directly to recovery of the covered species, after taking into account the length of this Agreement and any off-setting adverse effects of authorized take.

This agreement produces a net conservation benefit to Railroad Valley springfish and contributes to recovery in the following ways:

- Provides spring and stream habitat within designated critical habitat for the reintroduction and recovery of the Big Warm Spring population;
- Contributes to recovery goals by seeking to maintain a minimum population of 3,000 Railroad Valley springfish within Big Warm Spring, which exceeds the recovery goal of a minimum of 1,000 individuals;
- Provides a source of Railroad Valley springfish for use in genetic exchanges between Duckwater Shoshone Tribe populations;
- Provides study sites for research related to life-history, genetics, ecology, habitat requirements, and interactions with non-native aquatic species; and,
- Provides a convenient site for education and public relations related to endangered and threatened species recovery, conservation of limited resources, and ecology in general,
- Provides a successful example of Tribal to government cooperative efforts to recovery threatened and endangered species.

## **8. AGREEMENT AND PERMIT DURATION**

Except as it may be otherwise provided by this Agreement, the Agreement, including the obligations of the Parties and any commitments related to funding, will be in effect for 25 years

following the date of its signing by the Parties. The rights to take will hold for the duration of the Federal and State permits, as issued by the Department under separate agreement. Except as it may be otherwise provided by this Agreement, the Federal section 10(a)(1)(A) permit authorizing incidental take of the covered species will have a duration of 25 years from its effective date. State authorization permitting incidental take of the covered species under NAC 503.093 will be provided for the period of 25 years from its effective date, but will be addressed through individual letters of authorization from the Department to the Applicant. The Agreement and Permit may be renewed beyond their specified durations through amendment, with concurrence of the Parties. Given the probable time required to reintroduce the springfish and eventual reproduction and survival of young springfish, the Parties estimate it may take two [2] years of implementing the Agreement to fully reach a net conservation benefit for the species, although some level of benefits will likely occur within a shorter time period. Based on previous experience in the recovery of similar springfish species, the 25-year duration of this Agreement is considered sufficient to establish and maintain self-sustaining populations of Railroad Valley springfish on Tribal property enrolled through these Agreements at a level that will substantially augment and assist recovery efforts for this species. The 25-year permit term will be advantageous to the Parties because of the potential that additional properties with adequate habitat could be restored and recovered over the term of the permit and enrolled for conservation purposes under similar Safe Harbor Agreements.

## **9. TAKE**

Take is defined as actions or attempted actions to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect such 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 that is incidental to, but not the purpose of, otherwise lawful activities.

Under the terms of this Agreement, the Applicant is authorized to make use of their enrolled property in any manner that does not result in reducing the population and/or occupied habitat of Railroad Valley springfish below the established baseline conditions. The permit will authorize incidental take of Railroad Valley springfish and their progeny resulting from lawful activities within the enrolled property, from the time this Agreement is signed until expiration of the permit. Such uses may include, but are not limited to:

- building or fence construction,
- control of weeds through mechanical, livestock, and/or legal application of herbicides and pesticides within label instructions,
- maintenance of riparian plants,
- maintenance of recreational facility infrastructure,
- casual recreational use (swimming, sunbathing, hunting, and picnicking),
- managed livestock grazing,
- greenhouse operation,

- Tribal cultural/religious/spiritual events,
- normal utilization of Big Warm Spring water for agricultural and livestock irrigation.

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 take of Railroad Valley springfish, the Applicant shall provide at least 30 calendar days notice to the Service to allow for removal of Railroad Valley springfish to other habitats within the enrolled property or the removal of Railroad Valley springfish from the enrolled property.

In addition to establishing the enrolled property's baseline, this Agreement details the take of above-baseline individuals that is likely to occur. Implementation of this Agreement is expected to result in increased numbers of Railroad Valley springfish in excess of the enrolled property's established elevated baseline population. The maximum net impact of take authorized under the Safe Harbor program is a return to initially established elevated baseline conditions (minimum 3,000 individuals), which would not have an adverse impact on Railroad Valley springfish populations as a whole.

To return the enrolled property to elevated baseline conditions, the Applicant must demonstrate that the agreed upon elevated baseline conditions were maintained and the activities identified in the Agreement were carried out for the duration of the Agreement. At the end of the permit term, if the species has not been de-listed, the Applicant may seek a permit extension to avoid accruing take liability under the ESA. However, no species or habitat will be impacted until the Applicant has given the Service at least a 30 calendar day prior notice to relocate any remaining springfish from the area to be impacted.

## **10. REPORTING AND MONITORING**

**10.1. COMPLIANCE MONITORING:** The Service will visit enrolled properties with 10 working days advance notice to ensure compliance with this agreement, including any obligations of the Applicant and maintenance of elevated baseline responsibilities.

**10.2. BIOLOGICAL MONITORING:** Following the placement of Railroad Valley springfish on enrolled lands or when springfish are otherwise known to be present, the Applicant with the assistance of the Service where appropriate, will monitor Railroad Valley springfish by visiting occupied enrolled lands at least semi-annually to ascertain the number of Railroad Valley springfish present and growth rates, to monitor aquatic habitat quality, to perform management actions on animals present on the enrolled lands including marking/tagging and capture/removal of fish for release to the wild, and for the purpose of evaluating the efficacy of current management activities and strategies for occupied habitats.

**10.3. ANNUAL REPORT:** The Applicant must provide information to assist with the compilation of, an annual report on the implementation of this Agreement. Annual reports will cover the period from July 1st to June 31st each year and are due October 1st of each year. Copies will be made available to the Service and the Applicant. This annual report will include information on the results of biological and compliance monitoring, including, overall status of

Railroad Valley springfish, numbers of Railroad Valley springfish stocked into individual ponds or aquatic habitats or removed for release to the wild by enrolled property, management activities undertaken related to Railroad Valley springfish and occupied habitats, maintenance of baseline conditions, and any take of Railroad Valley springfish on enrolled lands covered by under this Agreement, including numerical losses during the irrigation season which cannot be attributed to specific causes.

**10.4. ADAPTIVE MANAGEMENT:** Adaptive management allows for mutually agreed-upon changes to the Agreements conservation measures in response to changing conditions or new information. If the expected results of the conservation measures appear ineffective, management activities can be changed or alternative activities undertaken to achieve those results. Decisions related to adaptive management will be based on an evaluation of the compliance and biological monitoring results detailed in the annual reports and on field observations by the Parties to this Agreement.

Adaptive management decisions can be made at any time deemed necessary by the Parties, however, a major evaluation of this Agreement will be carried out every five years, to ensure achievement of the conservation goals. Management activities will be evaluated to determine if they are protecting the Railroad Valley springfish from incidental take and are supporting a self-sustaining, genetically appropriate Railroad Valley springfish population. If survival of Railroad Valley springfish placed in the enrolled protected habitat is insufficient to meet recovery program objectives or expected biological criteria from life history information in other similar habitats, the Parties will assess reasons for low performance or survival may change management activities accordingly. This will include, but is not limited to, management actions such as the evaluation of habitat requirements, habitat restoration/enhancement projects, and actions to directly improve aquatic habitat quality. The evaluation will also include an assessment of incidental take that has occurred to determine if high levels of ongoing take that may have occurred and may be prevented or reduced through modifications to management practices in aquatic habitats or on enrolled land. Adaptive management will be done with concurrence from the Parties involved.

If management activities need to be altered to improve benefits for the species, this Agreement will be amended without altering the responsibilities of the Parties. However, if the Applicant agrees to alter its responsibilities under this Agreement then any modification of its responsibilities in relation to adaptive management will be addressed on a case by case basis. Strategies to reduce incidental take, will be reviewed with the Parties and implemented where appropriate on a voluntary basis.

## **11. FUNDING**

The responsibilities of the Parties under this Agreement, to monitor and carry out biological monitoring and management of Railroad Valley springfish on the enrolled property, will be funded by federal programs using existing grants, new federal grants and other sources. The responsibilities of the Service under this Agreement will be funded by the Service. Management

activities undertaken by the Applicant will be paid for by the Applicant while implementing those activities, unless otherwise agreed to under separate federal assistance grant agreements.

## **12. MODIFICATIONS**

After execution of this Agreement, the Service may not impose any new requirements or conditions on, or modify any existing requirements or conditions applicable to, the Applicant except as stipulated in 50 CFR 17.22(c)(5) and 17.32(c)(5).

12.1. MODIFICATION OF THE AGREEMENT: This Agreement may be modified to accommodate changed circumstances as provided by 50 CFR 13.23. Any Party may propose modifications or amendments to this Agreement by providing written notice to the other Parties and obtaining their written concurrence. Such notice shall include a statement of the proposed modification, the reason for it, and its expected results. 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.

12.2. AMENDMENT OF THE PERMIT: The permit may be amended to accommodate changed circumstances in accordance with all applicable legal requirements, including but not limited to the ESA, the National Environmental Policy Act, and the Services permit regulations at 50 CFR 13 and 50 CFR 17. Any Party may propose amendments to the Permit by providing written notice to the other Party. Such notice shall include a statement of the proposed amendment, the reason for it, and its expected results.

12.5. TERMINATION OF THE AGREEMENT: The parties will not terminate this Agreement before its expiration 25 years following approval except as provided for in Part 12 of the Service's Safe Harbor Policy (FR 64:32717). In such circumstances, the Applicant may return the enrolled property to elevated baseline conditions even if the expected net conservation benefit has not been realized, provided that baseline conditions have been maintained. The Applicant may terminate this Agreement due to circumstances beyond the Applicant's control. The Applicant also may terminate this Agreement at any time for any other reason, but termination for reasons other than uncontrollable circumstances such as those associated with a force majeure event, shall extinguish the Applicant's incidental take authority under the permit. The Applicant must subsequently surrender its permit to the Service. The Applicant must provide the Service 90 calendar days written notice prior to termination, and also provide the Service and the Department the opportunity to relocate Railroad Valley springfish within 60 calendar days of receiving that notice. Following that determination and notification to the Applicant, the Department, with the assistance of the Service when appropriate, shall remove all Railroad Valley springfish from the enrolled lands within 60 calendar days in coordination with the Applicant, and release the Applicant from any further obligations under the Agreement.

12.6. PERMIT SUSPENSION OR REVOCATION: The Service may suspend or revoke the Federal permit for cause in accordance with the laws and regulations in force at the time of such suspension or revocation. The Service also, as a last resort, may revoke the permit if continuation of permitted activities would likely result in jeopardy to covered species (50 CFR

13.28(a)). Prior to revocation, the Service would exercise all possible measures to remedy the situation.

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

12.8. DISPUTE RESOLUTION: The Parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.

### **13. ADDITIONAL MEASURES**

13.1. SUCCESSION AND TRANSFER: This Agreement shall be binding on and shall insure 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 Agreement shall run with the ownership of the enrolled property and are transferable to subsequent private property owners pursuant to 50 CFR 13.25. The Applicant shall notify the Service of any transfer of ownership at least 90 calendar days prior to the intended transfer, so that the Service can attempt to contact the new owner, explain the baseline responsibilities applicable to the property, and explain the terms and conditions of the Agreement. By becoming a party to the original agreement and permit, the new owner will have the same rights and obligations with respect to the enrolled property as the original owner at the original baseline. The new owner(s) also will have the option of receiving Safe Harbor assurances by signing a new Agreement.

13.2. AVAILABILITY OF FUNDS: Implementation of this Agreement is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury. The Parties acknowledge that the Service will not be required under this Agreement to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing. It is understood that all funding commitments made under the Agreement are subject to budget authorization and approval by the appropriate agency or government appropriation.

13.3. RELATIONSHIP TO OTHER AGREEMENTS: This agreement is intended to complement other conservation activities to benefit wildlife that may be occurring or may occur in the future on enrolled properties. Nothing in this agreement shall preclude the development between the Parties of cooperative agreements for activities under Partners for Fish and Wildlife, the Tribal Wildlife Grants Program and Tribal Landowner Incentives Program, or similar conservation programs unless such activities are in conflict with the objectives and implementation of this agreement.

13.4. NO THIRD-PARTY BENEFICIARIES: This Agreement does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this Agreement to maintain a suit for personal injuries or damages pursuant to the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties to this Agreement with respect to third parties shall remain as imposed under existing law.

13.5. OTHER LISTED SPECIES, CANDIDATE SPECIES, AND SPECIES OF CONCERN: The possibility exists that other listed, proposed, or candidate species, or species of concern and suitable habitats for those species may occur in the future on lands enrolled in the Agreement as a direct result of a Applicant's voluntary conservation actions. If biological surveys determine this Agreement will provide a net conservation benefit to any such species or their potential habitat, the Parties may agree to amend the Agreement and permit to cover additional species, at the Applicant's request.

If federally designated candidate species should occur on enrolled properties, the Service will recommend measures for including them in a joint Safe Harbor Agreement/Candidate Conservation Agreement with Assurances to contribute toward the conservation of those species. If appropriate measures are included in such an agreement, the Service, consistent with its "No Surprises" policy, will not impose additional requirements on the Applicants as a result of any such species later being listed as threatened or endangered.

13.6. NOTICES AND REPORTS: Any notices and reports, including monitoring and annual reports, required by this Agreement shall be delivered to the persons listed below, as appropriate:

Field Supervisor, Nevada Fish and Wildlife Office, U.S. Fish and Wildlife Service  
1340 Financial Blvd., Suite 234, Reno, Nevada, 89502

#### **14. REFERENCES CITED**

Bailey, R.M., J.E. Fitch, E.S. Herald, E.A. Lachner, C.C. Lindsey, C.R. Robins, and W.B. Scott. 1970. A list of common and scientific names of fishes from the United States and Canada. 3<sup>rd</sup> edition. American Fisheries Society Special Publication 6.

Hubbs, C.L. 1932. Studies of the fishes of the order Cyprinodontes. XII. A new genus related to *Empetrichthys*. Occasional Papers of the Museum of Zoology, No. 252, Univ. of Michigan, Ann Arbor.

Hubbs, C.L., and R.R. Miller. 1941. Studies of the fishes of the Order Cyprinodontes: XVII. Genera and species of the Colorado River System. Occasional Papers of the Museum of Zoology, No. 433, Univ. of Michigan, Ann Arbor.

La Rivers, I. 1962. Fishes and fisheries of Nevada. Nevada Fish and Gem Commission. Carson City, Nevada.

Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott.

1980. A list of common and scientific names of fishes from the United States and Canada. 4<sup>th</sup> edition. American Fisheries Society Special Publication 12.

Snyder, C.T., G. Hardman, and F.F. Zdenek. 1964. Pleistocene lakes in the Great Basin. U.S. Geological Survey Water Supply Paper 679-B.

Williams, C.D. 1986. Life history of the Railroad Valley springfish, *Crenichthys nevadae* Hubbs (Cyprinodontidae), of east-central Nevada. M.S. Thesis. Department of Biological Sciences, California State University, Sacramento.

Williams, J.E. and G.R. Wilde. 1981. Taxonomic status and morphology of isolated populations of White River springfish, *Crenichthys baileyi* (Cyprinodontidae). Southwestern Naturalist 25(4):485-503.

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Safe Harbor Agreement to be in effect as of the date that the Service issues the permit.

\_\_\_\_\_  
Tribal Chairperson  
Duckwater Shoshone Tribe

Date\_\_\_\_\_

\_\_\_\_\_  
Tribal Manager  
Duckwater Shoshone Tribe

Date\_\_\_\_\_

\_\_\_\_\_  
Field Supervisor, Nevada Field Office  
U.S. Fish and Wildlife Service

Date\_\_\_\_\_

**15.0 Appendix A: Railroad Valley Springfish Translocation Guidelines**

Railroad Valley springfish translocation guidelines were established by referring to the American Fisheries Society Guidelines for Introductions of Threatened and Endangered Fishes, consulting with species experts such as Gary Scopettone with U.S. Geological Survey, Biological Resources Division and Jon Sjoberg and Brian Hobbs of the Nevada Department of Wildlife, and site specific knowledge.

### **15.1 Source Stock Criteria.**

Introduction source stock of sufficient number and character will be obtained. If the source population is not threatened by imminent loss, no more than 10 percent of the population should be removed annually. A minimum of 100 fish total will be introduced through a series of three to four translocations. The length of fish selected for translocation should be between 45 mm and 80 mm in fork length. Introductions of fish in successive months are permitted to meet these criteria.

If the donor population is sufficiently large such that the 100 fish minimum can be collected without exceeding removal of 10 percent of the populations (i.e. adult population >1000 fish), then all 100 fish will be transported in one collection event. If the donor population is less than 1000 fish then 10 percent will be collected and translocated in one year and this process will be repeated (10 percent of donor populations collected) each year until a total of 100 fish have been translocated.

### **15.2 Collection and Transport Methodology.**

Railroad Valley springfish will be captured using baited minnow traps. Fish will be collected in 19 liter (l) (5 gallon) buckets and transferred to a large cooler (minimum of 152 L or 40 gallon) for transporting. Fresh water, of the same temperature as Indian Spring will be placed in the cooler immediately prior to transport in addition to battery operated aerators to provide adequate oxygen. Temperature will be recorded.

Transport time will be minimized. The condition of the fish will be monitored during transport, if time of transport exceeds 15 minutes. Approximately 100 l of additional fresh water will be transported in a separate container and will be used to supplement the transport water in the event that the fish appear to be stressed due to temperature changes, low oxygen, or ammonia buildup.

The temperatures of water in both the cooler and introduction site will be measured upon arrival. Fish will be acclimated over a period of 20 minutes prior to release at the introduction site.

### **15.3 Timing.**

Stock will be introduced under the most favorable weather and hydrologic conditions ensuring that water temperatures and dissolved oxygen conditions are ideal. Transfers during the spawning season will be avoided. The site, number of fish stocked, source population, introduction site, and persons conducting the introduction will be documented.

#### **15.4 Post-Introduction Activities.**

Conduct systematic monitoring of introduced populations. Cause of unsuccessful introductions will be determined and fish restocked if warranted. Restock if warranted. Findings and conclusions will be documented.

#### **15.5 Literature Cited**

Williams, J. E., D. W. Sada, C. Deacon Williams and Other Members of the Western Division Endangered Species Committee. 1998. American Fisheries Society Guidelines for Introductions of Threatened and Endangered Fishes. Fisheries, Vol. 13. No. 5.

#### **16.0 Appendix B: Railroad Valley Springfish Monitoring Protocol**

The following monitoring parameters and factors were established based on the Department's monitoring protocol for Railroad Valley springfish. In addition, information must be collected because the Railroad Valley springfish life history and habitat preferences have only been determined for the Locke's Ranch Wildlife Management Area populations.

### **16.1 Physical Habitat Assessment.**

The following parameters will be collected every 50 meters starting at the spring sources: substrate (percent silt and organics), depth (maximum, mean, range), water temperature, and total surface area. Aquatic vegetation will be identified to genus and percent of surface area cover will be recorded using ocular estimates.

Water quality parameters including pH, dissolved oxygen, specific conductance, redox potential, and total dissolved solids will be measured every other survey. Temperature during the breeding season will be measured by HOBO water temperature data pods.

### **16.2 Population Abundance Estimates.**

Railroad Valley springfish population estimates will be obtained bi-annually through snorkel surveys and direct count methods. Snorkel surveys will be conducted during March and September, beginning at the Duckwater Falls and progressing upstream until reaching the spring sources. Railroad Valley springfish above 40mm in fork length will be enumerated and recruitment of young of the year will be monitored to verify reproduction.

Alternatively, pairs of minnow traps set at 50 meter intervals from the spring sources downstream to the pond will be used to estimate Railroad Valley springfish population sizes at Big Warm Spring should the conditions prohibit snorkel surveys and direct counts. Mark and recapture protocol will be implemented to determine the Railroad Valley springfish population estimate at Big Warm Spring. Mark and recapture surveys will be conducted during March and September to coincide with surveys occurring at Locke's Ranch Wildlife Management Area.

### **16.3 Spawning Observations in the Field.**

Qualitative surveys will be conducted to determine Railroad Valley springfish spawning activity and success. Larvae presence and relative abundance and/or spawning behavior will be monitored at Big Warm Spring through snorkeling and direct observation. Spawning behaviors will be recorded as evidence of spawning, i.e., territory establishment by males, aggressive skirmishes between males, and courting behaviors.