

SAFE HARBOR AGREEMENT

For the White River Spinedace

(Lepidomeda albivallis)



**U.S. FISH AND WILDLIFE SERVICE,
NEVADA DIVISION OF WILDLIFE,
AND WALTER AND CARROL CRIPPS**

**NEVADA FISH AND WILDLIFE OFFICE
1340 Financial Boulevard, Suite 234
Reno, Nevada 89502
(775) 861-6300
(775) 861-6301 Fax**



SAFE HARBOR AGREEMENT FOR THE WHITE RIVER SPINEDACE

1. INTRODUCTION

This Safe Harbor Agreement (Agreement) for the White River Spinedace is entered into as of the day _____ between Walter and Carrol Cripps (permittee), the Nevada Department of Wildlife (NDOW) and the U.S. Department of the Interior, Fish and Wildlife Service, Nevada Fish and Wildlife Office, Reno, Nevada (FWS-Reno); hereinafter collectively called the “Parties.” The purpose of this Agreement is to facilitate the establishment of a refugia population of White River spinedace (*Lepidomeda albivallis*) a federally listed endangered species and provide assurance that in doing so the landowner will not be subject to additional regulation related to the presence of endangered species on their property. This Agreement follows the Fish and Wildlife Service’s Safe Harbor Agreement policy (64 FR 32717) and regulations (64 FR 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 Safe Harbor Agreement Policy was developed to encourage private and other non-Federal property owners to voluntarily undertake management activities on their property to enhance, restore, or maintain habitat to benefit Federally-listed species. Under this Policy, property owners who undertake management activities that attract listed species onto their properties, or into areas affected by actions undertaken on their property, or that increase the numbers or distribution of listed species already present on their properties, will not incur future property-use restrictions. Safe Harbor Agreements provide assurances to the property owner that allow alterations or modifications to enrolled property, even if such action results in the incidental take of a listed species or in the future, returns the species back to an originally agreed upon baseline condition (i.e., species population estimates and distribution and/or characteristics and determined area of the enrolled property that sustain seasonal or permanent use of the covered species at the time the Agreement is executed).

This Agreement between the Parties provides conservation benefits to and incidental take coverage for the White River spinedace. This species was listed as endangered on September 12, 1985 (50 FR 37194) pursuant to the Endangered Species Act of 1973, as amended (ESA; 58 FR 53800). Critical habitat was designated and encompasses the following springs and their outflows plus surrounding land areas for a distance of 15 meters from these springs and outflows:

- 1) Preston Big Spring and associated outflow within T. 12 N., R. 61 E., NE ¼ sec. 2, White Pine County, Nevada;

2) Lund Spring and associated outflow within T. 11 N., R. 62 E., NE ¼ NE ¼ sec. 4 and T. 12 N., R. 62 E., S ½ SE ¼ sec. 33, White Pine County, Nevada; and

3) Flag Springs and associated outflows within T. 7 N., R. 62 E., E ¼ NE ¼ sec. 32, SW ¼ NW ¼ sec. 33, Nye County, Nevada (50 FR 37194).

A recovery plan for the White River spinedace was finalized on March 28, 1994 (USFWS 1994). The recovery plan criteria for downlisting this species to threatened are: 1) A self-sustaining population exists in each of the three designated critical habitats for at least five consecutive years; 2) each critical habitat is secure from all known threats, and; 3) all native fish are present in each of the critical habitats; Flag Spring, Preston Big Spring, and Lund Spring that were present historically. In addition, one of the recovery actions listed in the recovery plan consist of establishment of a refugia population until habitat can be restored and spinedace can be reintroduced within designated critical habitat areas. Until negotiations with stakeholders are finalized for implementation of habitat restoration projects at Preston Big Spring and Lund Spring, a refugia population at Indian Spring is the most effective and immediate way to conserve the species.

1.1 Population Status and Distribution

The White River spinedace is a small minnow endemic to the White River Valley, in eastern Nevada (Family: Cyprinidae). The White River spinedace historically inhabited the White River just below the mouth of Ellison Creek, Preston Big Spring, Nicholas Spring, Lund Spring, Arnoldson Spring, Flag Spring, Cold Spring, Indian Spring and as far south as the White River 15 kilometers downstream from Flag Springs (Figure 1) (USFWS 1994). White River spinedace habitats have been altered since the mid-1800's, when the first settlers began diverting water from streams and spring outflows for agriculture and ranching purposes. With the exception of Flag Springs, all springs historically occupied by White River spinedace have all or a significant portion of their outflow streams captured in underground pipes or concrete-lined channels (USFWS 1994). Additionally, introductions of exotic game fish (non-native trout and bass) have been implicated in the decline of White River spinedace due to predation and or competition for available resources (Courtenay, et al. 1985, Scoppettone 2003).

At the time of listing, the last remaining populations of White River spinedace were restricted to small remnants of historic habitats at Lund and Flag Springs representing less than 3 percent of the species' historic range (USFWS 1994). By 1994, survey data revealed that the populations of spinedace at Lund Spring had been extirpated and that the Flag Spring population had declined to fewer than 25 individuals, with no obvious indication of recent recruitment (Scoppettone et al. 1992). After non-native fishes were eradicated in 1995 and NDOW relocated the spinedace downstream in lower Flag Spring, the population rebounded to over 1,000 individuals. The population has fluctuated between 800 to 1,500 individuals and currently 994 White River spinedace inhabit the Flag Springs complex (NDOW, March 2003 unpublished data). With only one highly localized population of White River spinedace in existence, a refugia population must be established to reduce the threat of extinction.

1.2 Purpose of Agreement

White River spinedace 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 single existing population (donor population) an essential conservation tool for this species. An important recovery task for White River spinedace in the White River Valley is the establishment of new, self-sustaining populations at springs and streams with suitable habitat that are devoid of non-native predators. This Agreement proposes to establish a new population of White River spinedace as a refugia for the natural population. The proposed refugia site at Indian Spring is located in the northern portion of the White River Valley, White Pine County, Nevada (Figure 2). Translocating a small portion of the White River spinedace population from the Flag Spring site to Indian Spring, would contribute to species conservation by reducing risks associated with the complete loss of the donor population and thus loss of any unique genetic material.

2.0 Agreement and Permit Duration

The Agreement is between the Permittee, the FWS-Reno, and NDOW. The purpose of the Agreement is to establish a population of White River spinedace on the Permittee's property. The Agreement duration is 5 years, during which time the Permittee will engage in specific conservation actions and will avoid engaging in activities which could result in take of the White River spinedace (see Section 8 of this Agreement). The section 10(a)(1)(A) permit authorizing incidental take of White River spinedace will have a term of 30 years from the effective date of this Agreement and allows the Permittee to return this population of White River spinedace to baseline conditions.

The last remaining White River spinedace population exhibits high annual variability, therefore, it may take up to 3 or 4 White River spinedace translocations over 1 to 2 years for the establishment of a sustainable population needed to provide a net conservation benefit for the species (Scoppettone pers. comm. March 2003 and Hobbs pers. comm. April 2003). A population size of approximately 100 individuals is the target size for use as a founder population at Indian Spring (Scoppettone personal comm. 2003). No more than 10 percent of the donor population will be translocated in any one year (Williams et al. 1988). Based on the methodology defined in the American Fisheries Society Guidelines for Introductions of Threatened and Endangered Fishes (Williams et. al. 1988), no more than 10 percent of the Indian Spring population should be removed at one time and this population should not be reduced below 200 individuals. Approximately 2 to 3 percent mortality (2 or 3 individuals) as a result of translocation activities may occur however, all precautions will be taken to reduce the possibility of any fish from expiring. The estimated carrying capacity of Indian Spring is 200 to 300 individuals. This information is derived from historical White River spinedace population levels at Flag Spring. Approximately 30 fish inhabited a pond at Flag Springs which was approximately one-tenth the size of the pond at Indian Spring. Upon reaching this threshold, this refugia population may be used as a source for further translocations or for the establishment of new populations within appropriate springs and streams within historic range as well as

augmentation of the original donor population.

2.1 Monitoring Requirements

NDOW will bi-annually monitor the White River spinedace population at Indian Spring, dependent on the availability of Traditional Section 6 funding. In the event that NDOW is unable to complete the monitoring commitments as agreed, FWS-Reno will fulfill monitoring responsibilities outlined in this Agreement (Appendix B). The NDOW has monitored the donor population at Flag Spring since 1995 and will continue monitoring, contingent upon funding, to determine population size and stability. If the donor population is reduced below a threshold of 200 individuals or to such a level that the continued existence of the population may be threatened, the donor population may be supplemented using White River spinedace from the Indian Spring population, providing that the proximate threats to the donor population are no longer present, and providing that the Indian Spring refugia population contains no fewer than 200 individuals, or that a decision is made to eliminate the Indian Spring refugia population entirely. Any translocations of White River spinedace from the Indian Spring site to supplement the donor population must receive prior concurrence by the FWS-Reno.

3.0 Description of Enrolled Lands

The enrolled lands hereinafter termed Indian Spring, are located at T12N, R61E, Section 2 SE near Preston, White Pine County, Nevada. Indian Spring consists of a series of four springs which flow into a single 0.5 km (0.32 mile) outflow stream that fills an artificial pond with a surface area of approximately 12,500 m² (129,598 ft²) and an average depth of 0.91 m (3.0 ft) (Figure 2). A buffer area comprised of a 91.5 m (300 ft) set back from the center of the spring sources and center of the outflow stream is included as enrolled lands. The 91.5 m buffer area established for the stream applies to the northern edge of the pond. In addition, a buffer area comprised of a 7.6 m (25ft) set back from the western, eastern, and southern edges of the pond is also included as enrolled lands. An irrigation diversion gate, which is not included in the enrolled lands but is connected to the stream, is located along the stream approximately 400 m (1312 ft) upstream from the pond. Water is diverted through a 183m (600 ft), 25 cm (10 inch) PVC pipe to an open earthen ditch where water is used to irrigate trees, lawn, and small gardens.

The property surrounding Indian Spring was once heavily grazed by sheep, cattle, and horses however, grazing activities have ceased since the early 1970's. Until the late 1980's, the area directly south of the pond was used for alfalfa production, but the landowners have since retired and are not engaging in any agricultural activities. Prior to the current ownership, the spring sources and the associated outflow was modified to convey water to the town of Preston which created a stream channel that was 10 to 15 meters (32-50 ft) in width and less than 7 to 16 mm (0.28 to 0.63 in) deep. However, Indian Spring was restored during September 2002 to improve hydrology, stream geomorphology, and restore habitat for fish and wildlife under the FWS Endangered Species Recovery Program and the Partners for Fish and Wildlife Program. In conjunction with restoration activities, the FWS-Reno and the landowners entered into an agreement that protects the above stated enrolled lands for a period of 15 years, expiring in 2017

(Partners for Fish and Wildlife Landowner Agreement Indian Springs 2002).

The terms of the Partners for Fish and Wildlife Landowner Agreement include:

- the landowner will provide access to the property when given reasonable notice for FWS-Reno and their cooperators to implement habitat development, management, and fish and wildlife surveys;
- the landowner will refrain from and prohibit any agricultural use of the project area, such as livestock grazing, cultivation, or excavation;
- the landowners will not introduce any non-native species of animal (fish) or substance that would endanger the life or environment of any species of fish native to Indian Spring and its outflow stream;
- the landowner will not modify or alter the hydrology of Indian Spring, specifically the spring sources, stream, and pond without contacting the FWS prior to construction or earth moving during the 15 year term.

The primary goal of restoring habitat at Indian Spring is to improve conditions for the species currently inhabiting that location. In addition, the habitat was restored to establish a refugia population of White River spinedace. The spring sources provide larval fish habitat while the water depths and velocities throughout the stream channel will provide the appropriate habitat for spinedace feeding and spawning. The pond was constructed during the early 1970's in an effort to impound water for agricultural use. Today, the pond is functioning primarily as fish and wildlife habitat in addition to providing aesthetic features for the property owners. The pond contains year round water, abundant submergent vegetation, ideal temperatures during spawning, and no non-native or predatory fish species, making it suitable habitat to establish a refugia for the White River spinedace (G. Scopettone, pers. comm. January 2003).

Native species currently inhabiting Indian Spring include the Preston White River springfish (*Crenichthys baileyi albivallis*), White River speckled dace (*Rhinichthys osculus* ssp.), and White River springsnail (*Pyrgulopsis sathos*). Considered species of concern to the FWS and to NDOW, these species are found at several locations in the White River Valley, including Indian Spring and are highly localized in distribution and abundance. The NDOW is currently developing a programmatic Candidate Conservation Agreement with Assurances (CCAA) to protect these species while providing assurances to landowners that they will not be subject to additional regulations or management action if any of these species were to be federally listed under the ESA. The development of a CCAA for these species will encompass four sites and is being negotiated with private landowners and the irrigation companies that utilize the water from several of these sites. The goal is to protect the four remaining populations of White River springfish from extinction.

3.1 Pond Overflow Protection

Although overflow of the pond could potentially occur following extreme rainfall events (100-year flood event) in the winter months, it is unlikely that the White River spinedace would be flushed from the pond. White River spinedace tend to be benthically oriented to the substrate

when they are isolated in pond environments (Scopettone et al. 2003) thus reducing potential for fish to be flushed from the pond in the case of an overflow. In addition, overflow from the pond exits at the south-eastern side where water temperatures are much cooler than temperatures preferred by spinedace.

3.2 Irrigation Diversion Protection

Prior to habitat restoration activities, the landowner attempted to maintain an open-earthen ditch to irrigate lawn and trees at the primary residence which is located south of the pond. Water flow through the ditch was continually impeded by emergent vegetation and tree roots causing the landowner to excavate the ditch annually. In 2002, an irrigation diversion gate was installed along the stream approximately 400 m upstream from the pond to increase the landowner's irrigation efficiency, reduce annual maintenance, and conserve water for native fish habitat along the stream. Water is diverted through a 183m (600 ft), 25 cm (10 in) PVC pipe to an open earthen ditch where water is used to irrigate trees, lawn and small gardens. Prior to or at the initiation of irrigation season at Indian Spring, the Permittee and the FWS-Reno will meet on-site prior to initiating diversion practices to assess and agree upon the amount of water diverted through the irrigation pipeline. Prior to the termination of each irrigation season, the Permittee will notify the FWS-Reno where upon the Parties will meet on-site to capture fish that may have become entrained in the irrigation ditch and relocate them in the pond. This would maximize the refugia benefit of Indian Spring and prevent loss of fish at the conclusion of irrigation seasons.

4.0 Baseline Determination

The baseline condition of Indian Spring (enrolled lands) was determined based on the presence or absence of White River spinedace currently occupying these lands. Field surveys conducted during 1991 and 1998 by the U. S. Geological Survey and July 2002 by the FWS-Reno indicated that zero White River spinedace occur at the Indian Spring site. Therefore, baseline condition for Indian Spring (i.e., Indian Spring sources, associated outflow, and pond) is zero. Under this Agreement and Permit, Indian Spring will be stocked with White River spinedace for the establishment of a refugia population and will be monitored bi-annually by the NDOW, dependent on available funding. Incidental take, under conditions listed below (See Section 7.0), will be authorized for Indian Spring per discretion of the Permittee upon termination of the permit duration.

5.0 Management Actions for White River Spinedace

The management actions under the Agreement for White River spinedace and the anticipated benefits to the species are:

- *Introduce White River spinedace at Indian Spring to establish a viable population*

which will serve as a refugia to the donor population.

The Agreement would involve movement of no more than 10 percent of the Flag Spring population to Indian Spring. Fish will be collected and introduced during the late summer and or fall 2003 and or spring 2004. Approximately 100 White River spinedace will be introduced into Indian Spring based on spring 2003 survey data which estimated 994 White River spinedace occurring at Flag Springs.

Subsequent introductions of White River spinedace to Indian Spring from Flag Springs will occur in September-October of 2004 and April-May of 2005, or until a minimum population size of 100 individuals is achieved. If the introduced population at Indian Spring does not reach 100 individuals by 2005, FWS and NDOW will make a decision regarding the appropriate course of action based on the situation. Fish mortality between introductions will be compensated for in subsequent introductions through 2004. No more than 10 percent of the donor population will be collected at any time.

- *Allow the FWS and NDOW access to the property to conduct surveys, monitor habitat conditions, and translocate White River spinedace for establishment or enhancement of new populations.*

The NDOW and FWS will bi-annually monitor the White River spinedace population and habitat conditions at Indian Spring. Prior to conducting field surveys, the NDOW and FWS will provide a minimum of 2 weeks notification prior to entering the Permittee's property. White River spinedace will be enumerated 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 FWS-Reno Office. An annual written report on the population status and habitat conditions will be submitted by NDOW to the FWS-Reno Office.

The carrying capacity of Indian Spring for White River spinedace is expected to be approximately 200 to 300 individuals, based on similar sized habitats occupied by this species (Scoppettone, pers. comm., March 2003). Once established, White River spinedace from the Indian Spring population may be used to supplement the Flag Spring population or to establish new populations. All subsequent translocations of White River spinedace from Indian Spring must be approved by the FWS-Reno. Historic range and sub-population genetic diversity are among the factors which will be used to evaluate future translocations of White River spinedace. Translocation of White River spinedace from Indian Spring to Flag Spring or other potential re-introduction sites, per approval by the FWS-Reno, 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 Indian Spring White River spinedace population include, but are not limited to disease, accidental contamination of the pond, or the establishment of alien predators or competitors.

- *Notification requirement: The Permittee will provide the FWS or NDOW with written notice three months prior (or per FWS approval, notice of sufficient*

amount of time to allow for movement of fish during spring or fall sampling) of any plans to implement the incidental take permit or alter landuse activities which may result in take of White River spinedace.

Upon receipt of notice by the Permittee to implement the take permit, the NDOW and FWS-Reno will remove White River spinedace from Indian Spring, if deemed practical or necessary by the FWS-Reno. Timing of White River spinedace translocation shall be during spring or fall sampling (usually in March or September) and shall be performed according to the fish introduction protocol set forth in this Agreement. Individuals shall be relocated to a site deemed appropriate by the FWS-Reno, per criteria already set forth in this document using the protocol described in Appendix A.

- *Change of Landowner: If a land transfer occurs that encompasses the Enrolled Lands, the Permittee will provide the FWS or the NDOW with written notice.*

The new landowner will have the option to become a party to the terms and conditions set forth in this document. Should the party not wish to enter into the Agreement, the FWS or the NDOW must be given 6 months notice and access to Indian Spring for the opportunity to relocate White River spinedace from Indian Spring prior to transfer of title or implementation of activities that would result in direct take of this species.

6.0 Net Conservation Benefit

This Agreement produces a net conservation benefit to White River spinedace by addressing the items listed below which are specific “tasks” in the White River Spinedace Recovery Plan (1994) intended to lead to recovery and eventual downlisting of the species. Establishment of new populations of White River spinedace is a major component of the recovery strategy for this species. The Agreement supports endangered species recovery actions provided for in the White River Spinedace Recovery Plan (1994) by supplying individual White River spinedace for the establishment of new, self-sustaining populations, thereby reducing the possibility of extinction through catastrophic events.

Implementation of this Agreement will contribute to the recovery of the White River spinedace in the following ways:

- Provide a refugium of White River spinedace that would increase the distribution and abundance of this species within its historic range;
- Establish a second population of White River spinedace which could serve as a donor source for possible reintroduction efforts at Preston Big Spring and Lund Spring;
- Reduce the possibility of extinction if catastrophic events or the invasion of non-native species occurred at Flag Springs;
- Provide a study site to further research such as life history, genetics, ecology, habitat requirements and inter-specific interactions between spinedace and other

- native fish species and;
- Provide an example for use in public relations to demonstrate that the FWS and private landowners can work cooperatively to maintain local lifestyles while providing habitat for endangered species.

The final rule to list White River spinedace under the ESA (58 FR 53800) listed the following threats to White River spinedace: “Physical and biological habitat alteration, agricultural use of water, channelization of spring flows, and the development of diversion structures around outflow creeks, activities that made water available for residential and agricultural uses, introduction of exotic fishes due to competition, predation, or the introduction of exotic parasites and diseases, as well as the use of copper sulfate for control of algae”. Indian Spring will provide suitable spinedace habitat in a landscape context which is protected from potential channelization of the creek, excessive diversion of water, use of copper sulfate to control algae blooms, and exotic fish introduction. The Agreement includes provisions whereby the introduced population of White River spinedace is protected from future land use alterations for a period of 5 years. After expiration of the agreement term (5 years), should the Permittee choose to undertake activities that result in take of White River spinedace (i.e., stocking of exotic fish, additional diversion of water for irrigation or other purposes, earthmoving or other silt-generating activities), 3 months advance notice prior to the upcoming fall or spring sampling season will be provided to the FWS-Reno, in writing, and to allow NDOW and the FWS-Reno to relocate spinedace from the Permittee’s property. Potential sites for introduction of White River spinedace were identified in the Recovery Plan (USFWS 1994), however, some sites on this list later proved to be unsuitable due to limited suitable habitat and or the presence of exotic fish species. The White River Fishes Recovery Implementation Team, in cooperation with the NDOW and the FWS-Reno are working with additional stakeholders to restore additional sites for reintroduction of White River spinedace.

7.0 Incidental Take of White River Spinedace

Safe Harbor Agreements are written in anticipation of “take” of listed species at some point in the future. Incidental take of White River spinedace could result from a variety of land management actions, however, measures will be implemented to prevent or reduce levels of incidental take. The Enrolled Lands for this Agreement occur within the context of the Permittee’s homesite and property boundaries. As such, the Permittee agrees to avoid the following land use activities for the minimum 5 year Agreement period.

The following is a list of activities which could result in incidental take:

- grazing of livestock upslope of or within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond;
- interruption, reduction, or elimination of water flow from the spring sources to the pond;
- stocking of exotic fish or amphibian species at Indian Spring sources, stream, and pond;

- removal of vegetation within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond;
- earthmoving activities within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond;
- implementing controlled burning activities within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond and;
- draining the pond of more than 25 percent of its capacity.

After the 5 year term is over, these activities will be covered by the permit authorizing incidental take of White River spinedace.

In addition to the activities listed above, factors beyond the Permittee's control could result in take of White River spinedace. Examples of extenuating factors include but are not limited to:

- predation by native wildlife;
- wildlife expanding from federal land onto the Permittee's property;
- extended drought periods and;
- flooding.

Efforts to salvage spinedace will be initiated as soon as possible in the event that any of the above-mentioned activities occur. Any loss of the populations due to such disturbances may require supplemental stocking of spinedace.

After the 5 year Agreement period has ended, the Permittee will notify in writing, at least 3 months in advance, the FWS-Reno of intent to engage in any of the above activities. The Permittee will consult with the FWS-Reno prior to conducting any of the above activities within a 91.5 m (300 ft) radius of Indian Spring sources and stream, and within 7.6 m (25 ft) of the pond.

As stated in Section 4.0, White River spinedace currently do not occupy the Enrolled Lands. In addition, expansion of this species beyond the Enrolled Lands is highly unlikely due to the isolated nature of Indian Spring and its outflow. Water flowing from the Indian Spring sources culminates into a single outflow stream which flows into a small pond where overflow from the pond is utilized for irrigation thus resulting in the isolation of Indian Spring on the Permittee's property. The Incidental Take permit will be valid for 30 years following completion of the 5 year Agreement. The Incidental Take permit can be renewed or extended prior to expiration upon consent of all parties or can be transferred to a new landowner providing they agree to the terms and conditions of this Agreement.

8.0 Responsibilities of the Parties

The 0.5 km stream fed by four spring sources which flows into the pond on the Permittee's property will be stocked with White River spinedace taken from the only existing population at Flag Springs. Indian Spring will be protected from land use activities deemed to be incompatible with White River spinedace survival and listed above in Section 7.0 for a minimum of 5 years.

8.1 NDOW

Contingent upon continued availability of NDOW budget allocation or competitive grant funding received) for conservation actions to benefit White River spinedace, NDOW will be responsible for the following actions:

- Conduct initial translocation of White River spinedace to Indian Spring using fish reintroduction protocols listed in Appendix A of this Agreement.
- Bi-annually monitor the Indian Spring White River spinedace population size, habitat conditions, and potential threats to the populations, per the protocol identified in Appendix B of this Agreement.
- Submit annual progress and monitoring report by April 30 annually to the Permittee and the U. S. Fish and Wildlife Service, Nevada Fish and Wildlife Office, 1340 Financial Blvd. Suite 234, Reno, Nevada 89502.
- Conduct removal of White River spinedace from Indian Spring, with concurrence by the FWS-Reno, upon a decision by the Permittee to return the population to baseline, or if deemed necessary and appropriate, due to imminent threat to the population, or for subsequent translocations from Indian Spring to alternative sites as described above.
- Provide a minimum of 2 weeks notice to the Permittee and the FWS-Reno prior to entering the property to implement management actions or surveys.
- Work with FWS-Reno and the White River Fishes Recovery Implementation Team to identify additional potential introduction sites for White River spinedace and to develop a translocation plan.

8.2 FWS-Reno

- Assist NDOW with the initial translocation of White River spinedace at Indian Spring.
- Monitor Indian Spring (enrolled lands) annually for Permit compliance.
- Provide review, advice, and approval to NDOW regarding necessity of translocating White River spinedace from Indian Spring (due to threats to the population, population growth beyond carrying capacity, or Permittee notice of intent to implement the Incidental Take Agreement) and for selection of additional introduction sites.
- Provide timely review and response to written notice of intent to implement the incidental take agreement by the Permittee. Provide non-mandatory technical advice on techniques to minimize impacts to White River spinedace.
- In the event that NDOW will not be able to conduct bi-annual monitoring of Indian Spring during the period of this Agreement, FWS will assume monitoring responsibilities for that year.
- Provide a minimum of 2 weeks notice to the Permittee prior to entering the property to implement management actions or surveys.
- Work with NDOW and the White River Fishes Recovery Implementation Team

to identify potential introduction sites for White River spinedace and to develop a translocation plan.

- Upon execution of this Agreement and satisfaction of all other legal requirements, the FWS will issue a permit, in accordance with section 10(a)(1)(A) of the ESA, to the Permittee authorizing incidental take of White River spinedace as a result of specified activities as described above. The term of the permit will be 30 years except if this Agreement is terminated prior to completion of its 5 year term, in which case the Incidental Take Permit will also be terminated. The activities that will be covered are:
 - grazing of livestock upslope of or within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond;
 - interruption, reduction, or elimination of water flow from the spring sources to the pond;
 - removal of vegetation within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond;
 - implementing controlled burning activities within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond;
 - earthmoving activities within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond and;
 - draining the pond of more than 25 percent of its capacity.

8.3 Permittee

- Allow the FWS-Reno and the NDOW access to the enrolled lands for White River spinedace translocation, monitoring of permit compliance, habitat condition, and population status.
- Contact and meet with the FWS-Reno and NDOW annually before diverting water through the existing irrigation diversion.
- Regularly maintain and clean the screen at the existing irrigation diversion intake.
- For the initial 5 years following White River spinedace translocation:
 - ▶ no construction of additional water diversions along the entire course of the Indian Spring stream;
 - ▶ contact FWS-Reno and NDOW prior to initiation of irrigation season to agree upon the amount of water to be diverted from the stream;
 - ▶ maintain at least half of the total stream flow through the entire length of the stream channel from the spring sources downstream to the pond;
 - ▶ no grazing of livestock upslope of or within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond;
 - ▶ no stocking of non-native or competitor fish or amphibian species at the Indian Spring sources, stream or pond;
 - ▶ no removal of native vegetation within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond;
 - ▶ no implementing of controlled burning activities within 91.5 m (300 ft) of

- ▶ Indian Spring sources, stream and within 7.6 m (25 ft) of the pond;
- ▶ no use of herbicide or pesticide within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond without prior consultation with the FWS-Reno and NDOW;
- ▶ no earthmoving activities within 91.5 m (300 ft) of Indian Spring sources, stream and within 7.6 m (25 ft) of the pond and;
- ▶ no draining of the pond of more than 25 percent of its capacity.
- Provide 6 months written notice of intent to implement the incidental take permit through any action which would result in loss or degradation of habitat or introduction of predators.

9.0 Monitoring and Reporting

NDOW will be responsible for annual monitoring and reporting related to this Agreement, per section 8.1 and as identified in Appendix B. Annual reports will provide information on: 1) the number of White River spinedace translocated from Flag Springs to Indian Spring; 2) the results of any translocation efforts and the status of White River spinedace populations in both the donor site and the recipient site; 3) habitat conditions at Indian Spring including temperature, water depth, vegetation, dissolved oxygen, and other parameters determined to be important to White River spinedace survival; 4) compliance of Permittee with the conditions set forth in this document; 5) presence of other fish or amphibians at Indian Spring; 6) recommendations for translocation of White River spinedace from Indian Spring due to overcrowding, imminent threat to the population, or other reasons; and 7) management recommendations for Indian Spring or the surrounding habitat. Annual reports will be due by April 30 to the FWS-Reno. A copy will be sent to the Permittee and to the FWS Regional Office in Portland, Oregon.

10.0 Additional Measures

10.1 Modification and Amendments

10.1.1 Modifications to the Agreement. Any party may propose modifications to this Agreement by providing written notice to the other parties. Such notice shall include a statement of the proposed modification and the reason for the modification. The parties shall respond within 60 days of receipt of such notice. Proposed modifications will become effective upon all parties' written approval.

10.1.2 Amendment of the Permit. The permit may be amended in accordance with legal requirements, including but not limited to the ESA, the National Environmental Policy Act, and the FWS's permit regulations. The party proposing the amendment shall provide a statement of the proposed amendment and the reasons for the amendment.

- 10.2 Permit Suspension or Revocation.** The FWS may suspend or revoke the permit for cause in accordance with the laws and regulations in force at the time of such suspension or revocation.
- 10.3 Remedies.** Each party shall have all remedies otherwise available to enforce the terms of this 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.
- 10.4 Dispute Resolution.** The parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by both parties.
- 10.5 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 money from the U.S. Treasury. The parties acknowledge that the FWS 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 by writing.
- 10.6 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 suite 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.
- 10.7 Relationship to Authorities.** The terms of the Agreement shall be governed by and construed in accordance with applicable Federal law. Nothing in this Agreement is intended to limit the authority of the FWS to fulfill its responsibilities under Federal laws. All activities undertaken pursuant to this Agreement or the permit must be in compliance with all applicable state and Federal laws and regulations.
- 10.8 Succession and Transfer.** This Agreement shall be binding on and shall inure to the benefit of the parties and their respective successors and transferees, in accordance with applicable regulations.
- 10.9 Notices and Reports.** Any notices or reports required by this Agreement shall be delivered, in writing, to the person(s) listed below:

Walter and Carrol Cripps

500 West White River Road
Preston, Nevada 89301
(775) 238-5327 (phone)

Director
Nevada Department of Wildlife
1100 Valley Road
Reno, Nevada 89512
(775) 688-1590 (phone)
(775) 688-1595 (fax)

Field Supervisor
Nevada Fish and Wildlife Office
U.S. Fish and Wildlife Service
1340 Financial Blvd. Suite 234
Reno, Nevada 89502
(775) 861-6300 (phone)
(775) 861-6301 (fax)

IN WITNESS WHERE OF, the parties hereto have executed this Agreement to be in effect as of the date that the FWS issues the permit.

Walter Cripps
Permittee

Carrol Cripps
Permittee

Director
Nevada Department of Wildlife

CNO Manager

11.0 Literature Cited

- Blinn, D. W., J. White, T. Pradetto, and J. O'Brien. 1998. Reproductive Ecology and Growth of a Captive Populations of Little Colorado Spinedace (*Lepidomeda vittata*: Cyprinidae). *Copeia*, pp. 1010-1015.
- Courtenay, W.R. Jr., J.E. Deacon, D.W. Sada, R.C. Allan, and G.L. Vinyard. 1985. Comparative status of fishes along the course of the pluvial White River, Nevada. *Southwestern Naturalist* 30:503-524.
- Scoppettone, G. G., J. E. Harvey, and J. Heinrich. 2003. Conservation, Status and Life History of the Endangered White River Spinedace, *Lepidomeda albivallis* (Cyprinidae). Unpublished and submitted to *Western North American Naturalist*.
- Scoppettone, G.G., J. Harvey, and S. Shea. 1992. Relative Abundance and Distribution of Fishes in the White Rier Valley, Nevada with Special Emphasis on the White River Spinedace (*Lepidomeda albivallis*). Manuscript. U.S. Fish and Wildlife

Service, National Fishery Research Center, Seattle, Washington.

U.S. Fish and Wildlife Service. 1985. Endangered and Threatened Wildlife and Plants: Determination of Endangered Status and Designation of Critical Habitat for the White River Spinedace. Federal Register 50:37194-31198.

U.S. Fish and Wildlife Service. 1994. White River Spinedace Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon.

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.

12.0 Appendix A: White River Spinedace Translocation Guidelines

White River spinedace 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 Scoppettone with U.S. Geological Survey, Biological Resources Division and Jon Sjoberg and Brian Hobbs of the Nevada Department of Wildlife, and site specific knowledge.

12.1 Source Stock Criteria. Obtain introduction source stock of sufficient number and character. 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 this 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 population collected) each year until a total of 100 fish have been translocated.

12.2 Collection and Transport Methodology. White River spinedace 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. Condition of 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.

12.3 Timing. Introduce stock under the most favorable weather and hydrologic conditions ensuring that water temperatures and dissolved oxygen conditions are ideal. Avoid transfers during the spawning season. Document the site, number of fish stocked, source population, introduction site, and persons conducting the introduction.

12.4 Post-Introduction Activities. Conduct systematic monitoring of introduced populations. Determine cause of unsuccessful introductions. Restock if warranted. Document findings and conclusions.

12.5 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.

13.0 Appendix B: White River Spinedace Monitoring Protocol

The following monitoring parameters and factors were established based on the NDOW's monitoring protocol for White River spinedace at Flag Springs. In addition, information will need to be collected as the White River spinedace life history and habitat preferences have only been determined for the Flag Springs population. This will be the first population of White River spinedace to be extensively studied outside of Flag Springs.

13.1 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.

13.2 Population Abundance Estimates. White River spinedace 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 pond and progressing upstream until reaching the spring sources. White River spinedace above 40mm in fork length will be enumerated and recruitment of you 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 White River population sizes at Indian Spring should the conditions prohibit the implementation of snorkel survey and direct count methods. Mark and recapture protocol will be implemented to determine the White River spinedace population estimate at Indian Spring. Mark and recapture surveys will be conducted during March and September to coincide with surveys occurring at Flag Springs.

- 13.3 Spawning Observations in the Field.** Qualitative surveys will be conducted to determine White River spinedace spawning activity and success. Larvae presence and relative abundance and/or spawning behavior will be monitored at Indian 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.