

**Project ID: 32007**

Bull Trout Habitat Restoration/Protection Program – Bruneau Subbasin

**Project Sponsor:** Shoshone-Paiute Tribes of Duck Valley Indian Reservation

**ISRP Comments:** A response is needed to describe the watershed assessment, strategies and priorities and proposed actions to address those priorities based on existing information and then adapt those as recovery plans are developed.

**Response:** The Jarbidge River Bull Trout Recovery Unit Team met for the first time in December 2001, to discuss bull trout recovery in the Jarbidge River Watershed. Since that time, U.S. Fish and Wildlife Service personnel have been reassigned to work on bull trout critical habitat issues in other portions of the Basin. At this time it is unclear when the group will reconvene. The Tribes would like to amend proposal 32007 (see attached revised budget) to consider the Dave Creek project only (which was attached as an Appendix to the original proposal). The Tribes and Bureau of Land Management have drafted a monitoring and evaluation protocol for the project, which follows the text of this response.

**ISRP Comment:** Nearly  $\frac{3}{4}$  of the initial year's funding request is for an unidentified subcontractor. Who is the subcontractor and what is there job?

**Response:** Attached please find a revised budget to cover the objectives identified in the Dave Creek Proposal (Appendix to proposal 32007). Subcontractors will be utilized for fence building (\$20,000), road crossing repair (\$10,000) and placement of large woody debris into the stream channel. If it is feasible, the Tribes will perform this work using seasonal workers. However, due to the distance from the Reservation to Dave Creek, it may be more cost effective to contract the work out. All monitoring and evaluation work will be done under the supervision of the Tribal fishery biologist and in cooperation with the Bureau of Land Management Jarbidge Office.

## **Monitoring Plan – Bull trout habitat restoration/protection – Dave Creek**

### **Introduction**

This Plan was developed jointly by BLM, Jarbidge Field Office, and the Shoshone-Paiute Tribes.

Monitoring would be conducted to ensure compliance with terms of the easement, and to assess trends toward achieving fish habitat and fish production goals. The project would monitor compliance with terms of the conservation easement, bull trout redd densities, and stream and riparian habitat conditions annually.

Reviews of past monitoring efforts have indicated that a number of key steps must be present in any plan in order for it to be successful (MacDonald et al. 1991, Conquest et al. 1994, Noon et al. 1997). These steps include but are not limited to, clear goals and objectives, a conceptual model linking the stressors to consequences, consistent and reliable measurement protocols, a study design that has the potential to detect differences, and clear linkage between monitoring results and management decisions.

### **Goals and Objectives**

- (1) Determine the direction and rate of change in key riparian and aquatic habitat indicators over time as a function of implementing the terms and conditions of the conservation easement.
- (2) Determine if land use is compliant with the terms and conditions of the conservation easement.
- (3) Determine if the terms and conditions of the easement are effective in maintaining or restoring bull trout habitat and riparian structure and function.

### **Stressors and consequences**

#### Stressors related to human activity

The following stressors were identified associated with the subject easement:

- 1). The road and road-stream crossing in Section 7, T 46 N, R 59 E.
- 2). Cattle grazing

### 3). Direct human land/resource use - recreation, hunting, fishing, hiking

#### Consequences

In general, the predominant effects of livestock grazing on stream channels have been reported as decreased stream bank stability, decreased undercut banks, and increases in fine sediments (Platts 1991). In general, excessive grazing and trampling of stream banks causes bank instability which leads to stream widening. Such widening decreases streamflow velocity and exposes more water surface to solar radiation (and irradiation), thus increasing temperature extremes. Bull trout are particularly vulnerable to altered temperature regimes.

Livestock grazing has been shown to influence the quantity and quality of pool habitats in streams. Excessive cattle grazing is associated with a decrease in the numbers and quality of pools. Altered channel stability and increased fine sediment causes a reduction in average pool depth and volume.

Livestock grazing, roads, and recreation activities adjacent to streams can cause disturbances that lead to increased erosion and fine sediment delivery to streams. Increased fine sediment in streams has been linked to a reduction in pool habitat and decreased rearing success. Fine sediment deposited in spawning gravel can reduce interstitial flow, potentially causing a decrease in dissolved oxygen and trapping emerging fry.

#### **Monitoring Indicators and Methods**

Indicators for monitoring were selected from US Fish and Wildlife Service's "Framework" for assessing bull trout habitats (USF&WS 1998).

1). Percent fines and substrate embeddedness in rearing areas or pools. The USF&WS references Shepard, Pratt, and Graham (1984) on work conducted in the Upper Flathead Basin. In that work, the authors estimated embeddedness using a technique whereby the observer rates embeddedness relative to one of 5 categories describing the extent to which dominant sized particles are buried in sand and silt. This method was tested for precision (repeatability) by Platts and others in 1983 and found to be a reasonably reliable estimator of substrate quality (observers differed by +/- 5.4% at the 95% level of confidence).

2). Substrate score was used by Shepard and others (1984) to describe rearing habitat potential for bull trout. Substrate scores were significantly related to juvenile bull trout densities. The score is determined from dominant and sub-dominant substrate particle size classes within pools used by fish for rearing, and the degree to which the dominant particles are embedded in fine sediment. Substrate and pool indicators will be monitored within **response reaches**- (<2% gradient, respond to sediment input, wood input by adjusting channel form

3). Spawning Habitat Survey: The spawning habitat survey is based upon: Graham and others (1981). Using this approach, the stream is walked in mid September and the locations of actively spawning fish are noted, along with stream segments with low gradient (<2%), relatively large amounts of gravel material, and high quality pools.

4). Grazing compliance: An annual assessment of compliance with terms in the Conservation Easement would be conducted to determine effectiveness of the grazing enclosure. Visual observations at the end of the season can establish if livestock have entered the enclosure. If it is determined that livestock entered the stream corridor, residual stubble height, and streambank alteration measurements will be made adjacent to the points of use to determine the extent of streamside utilization, based on Clary (2000) for residual stubble height, and Cowley 2002 and Bengeyfield and Svoboda (2000) for streambank alteration. These parameters are the best available for determining rates of recovery after grazing for streamside and instream characteristics beneficial to salmonids.

### **Quality-control**

Measures will include: 1) Using standardized protocols for data collection, 2) training crews to obtain consistent results with field protocols, and 3) annual review of results, including precision and accuracy.

### **Data analysis and reporting**

Comparative analyses will be used to detect differences between reference (upstream on the National Forest) and the treatment area. Examples of these analyses include frequency distribution examinations, cumulative frequency plots, direct comparisons of means and variances using t-tests, ANOVA or non-parametric equivalents. We will use repeated measures analysis of variance to look at the change in indicators over time.

Annual reports will summarize and describe compliance/non-compliance with implementing the terms of the conservation easement, including prevention of access by cattle. Habitat indicators and trends in redd counts, including the statistical analyses described above will be reported in writing every 5 years.

### **Project Roles**

The Shoshone-Paiute Tribes would have lead responsibility for monitoring. BLM Jarbidge Field Office would provide technical assistance.

<b><i>Position Title</i></b>	<b><i>Responsibilities</i></b>
Project Leader	Project supervision, oral and written report preparation, budget preparation, personnel
Riparian ecologist/Fishery Biologist/Crew supervisor	Report preparation, data synthesis/analysis, field crew training/supervision, oral presentations
Support services	Travel, timesheets, procurement,
Field technicians (Seasonal)	Summer field work

### **References**

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