

Water Supply Reserve Account – Grant and Loan Program
Water Activity Summary Sheet
Agenda Item 32.e.

Applicant: Pueblo County

Water Activity Name: Flathead chub movement associated with the Clear Springs Ranch diversion structure in Fountain Creek

Water Activity Purpose: Study

County: Pueblo

Drainage Basin: Arkansas River

Water Source: Fountain Creek

Amount Requested: \$35,000

Source of Funds: \$28,000 (Statewide Account) and \$7,000 (Basin Account)

Matching Funds: Yes (20% basin funds)

Staff Recommendation
Staff recommends approval of up to \$7,000 from the Arkansas Basin Account and \$28,000 from the Statewide account to help fund the flathead chub movement associated with the Clear Springs Ranch diversion structure in Fountain Creek project.

Water Activity Summary:

Flathead chub have been identified as a species of special concern in Colorado. Unpublished data from the U.S. Geological Survey (USGS) and the Colorado Division of Wildlife (CDOW) suggest that flathead chub maybe declining in Fountain Creek upstream of the two most downstream potential barriers in the basin. The Clear Springs Ranch Diversion (CSRD) structure is the farthest downstream barrier on Fountain Creek, located about 37 miles upstream from the confluence with the Arkansas River. In 2011 it is proposed that the CSRD will be retrofitted with a fishway with the intent of improving fish passage. The primary objectives of this proposed project are to determine movement patterns of flathead chub below the CSRD and the extent to which the CSRD currently impedes their upstream movement. This grant request will fund the study of the movement patterns associated with spawning of flathead chub and provide information as to when they move, if they migrate upstream to spawn and how far they migrate within the bounds of the sampling locations. In addition, data obtained about the flathead chub may be applicable to other plains fish species and provide a methodology for future fish studies.

Grant funds will be used to evaluate adult flathead chub movement through extensive “mark recapture efforts” among 9 sites along Fountain Creek. Adult flathead chub will be marked subcutaneously with a Visual Implant alphanumeric tag (VI Alpha tag). VI Alpha tags are a small fluorescing tag that displays an alphanumeric code when exposed to a UV-light. These tags allow researchers to track fish movement when previously marked individuals are recaptured. Because flathead chub are expected to spawn in summer (June – August) and migrate upstream to the CSRD prior to and/or during that time, initial fish marking and recapture efforts will begin in April 2010 and continue through October 2010. Results from this initial effort will determine when flathead chub move, if they migrate upstream to spawn, and how far they migrate within the bounds of the sampling

locations. Additionally, the grade control structure upstream from the CSRD presumably blocks farther upstream migration, and is a likely place to recapture any marked fish that pass through the CSRD. Recaptured fish at this site will allow determination of whether flathead chub pass upstream through the CSRD under its current configuration.

A few fishways have been installed in Colorado plains streams, yet none have integrated an understanding of fish movement patterns. Results of this study will allow project managers to ensure that design criteria based on swimming performance of flathead chub are met in the fishway during peak periods of flathead chub movement. Additionally, these results will inform future monitoring efforts, as they will identify the location of flathead chub populations within Fountain Creek that are most likely to use the fishway. Ultimately, results from this study will improve efforts to reconnect stream habitats for many Great Plains fish species and serve as a model for improving fish passage through other man-made barriers in the region. Finally, this project expects to provide the necessary baseline information needed to evaluate the efficacy of the fishway in the future.

Discussion:

Staff understands the importance of maintaining or improving the habitat of species of statewide concern and supports projects that help to avoid the listing of species on the threatened or endangered species lists. Furthermore, the applicant has indicated that a study related to the requirements of the Flathead chub or other plains fish does not exist and would be beneficial to the diversion reconstruction of the Clear Springs Ranch ditch. The design of the reconstruction of the diversion dam is partially paid for through a CWCB Fish and Wildlife Resources grant in the amount of \$70,000. If funded, this study will help determine how far the Flathead Chubs migrate up and down the creek as well as measure those parameters to provide the basis for design to overcome a significant impediment, the Clear Springs Ranch diversion dam.

The US Geological Survey and the Colorado Division of Wildlife have agreed to work together to obtain marking and monitoring data for the flathead chub in the area of the diversion structure. This data is critical for developing fish passage designs for plains fish species, the first of its kind in the state of Colorado. The conclusions reached by this study will inform future fish passage designs for these important warm water species.

Issues/Additional Needs:

Staff requests that the applicant ensure that this study is well coordinated with the design team and performed concurrent with the design of the fish passage.

Staff Recommendation:

Staff recommends approval of up to \$7,000 from the Arkansas Basin Account and \$28,000 from the Statewide account to help fund the flathead chub movement associated with the Clear Springs Ranch diversion structure in Fountain Creek project.

All products, data and information developed as a result of this grant must be provided to the CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and will help promote the development of a common technical platform.

In accordance with the revised WSRA Criteria and Guidelines, staff would like to highlight additional reporting and final deliverable requirements. The specific requirements are provided below.

Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the scope of work including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings and engineering reports/designs.

Engineering: All engineering work (as defined in the Engineers Practice Act (§12-25-102(10) C.R.S.)) performed under this grant shall be performed by or under the responsible charge of professional engineer licensed by the State of Colorado to practice Engineering.