

NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS
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2014

LAHONTAN CUTTHROAT TROUT MANAGEMENT
EASTERN REGION



**NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL JOB PROGRESS REPORT**

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**NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL JOB PROGRESS REPORT**

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Lahontan Cutthroat Trout management*
Subjob Title: *Lower T Creek and Lower Currant Creek Treatment*
Period Covered: *January 1, 2014 through December 31, 2014*

SUMMARY

The planning, permitting, and conducting of the Lower Currant Creek and Lower T Creek Rotenone treatment was completed in 2014. Treatment evaluation will occur in summer of 2015.

BACKGROUND

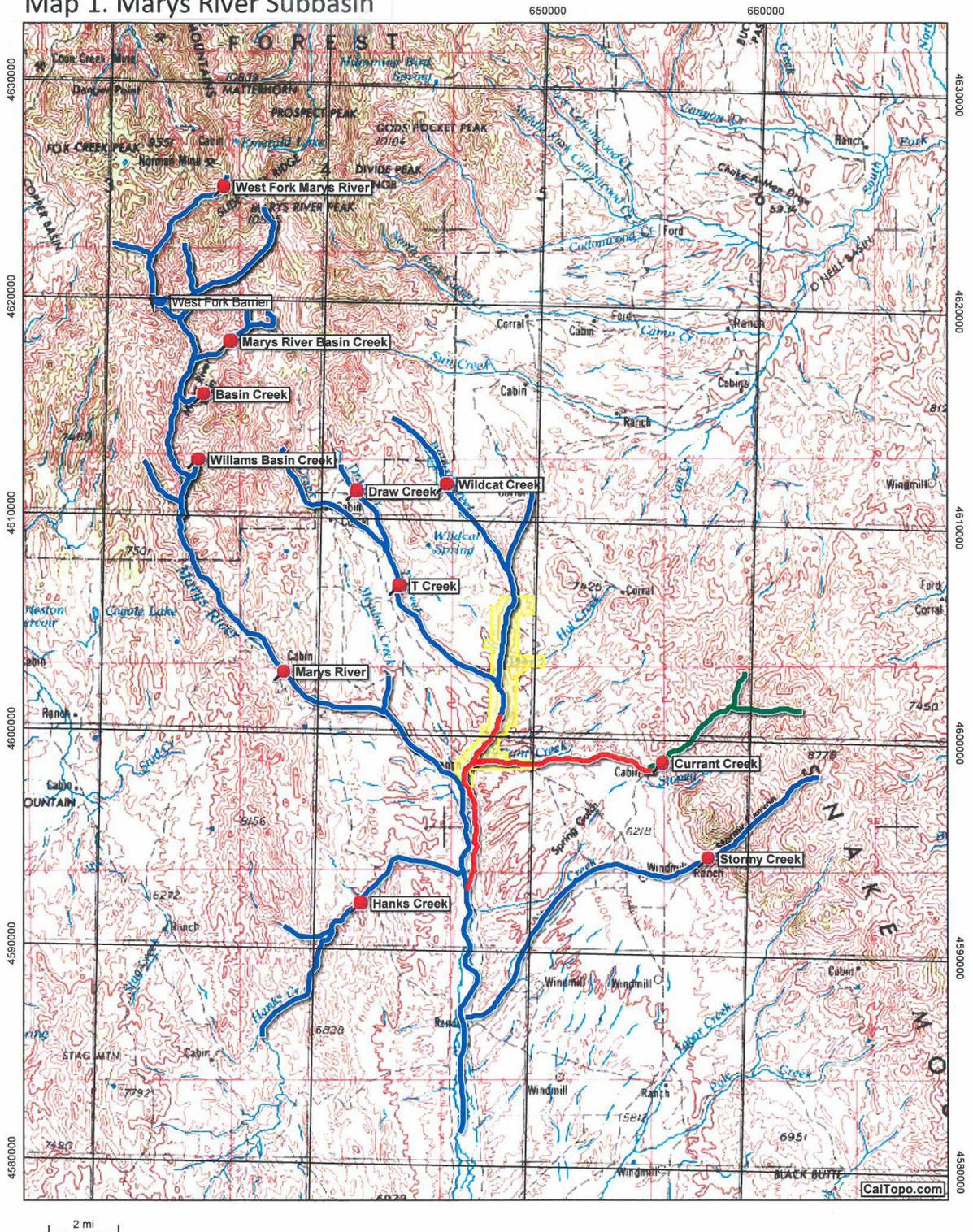
Lahontan cutthroat trout *Oncorhynchus clarkii* is the only trout native to the Lahontan basin. Lahontan cutthroat trout (LCT) occupied the drainages of ancient Lake Lahontan and as conditions became increasingly arid during the last 5,000 to 12,000 years, small populations survived in isolated headwaters streams of many mountain ranges in Nevada, Oregon, and California.

European settlement of the Great Basin resulted in livestock grazing, urban and mining development, water diversions, hybridization, and competition with non-native trout, which led to significant declines in the range and numbers of this unique trout species. In response to these declines, LCT was listed as endangered in 1970 and reclassified as threatened in 1975. In January of 1995, the USFWS released an LCT recovery plan.

Historically, LCT may have inhabited as much as 2,210 miles of stream habitat in the major subbasins of the Humboldt River during wet cycles. Early emigrant journals documented LCT in nearly all the major subbasins and occasionally to as far as the Humboldt Sink during wet years. The elimination of LCT populations from areas of the Humboldt Basin came as a result from either loss of habitat or through displacement or hybridization of introduced, non-native trout species.

The Marys River Subbasin (Map 1) has the greatest LCT metapopulation development potential (i.e., 169 stream miles) of the nine subbasins within the Humboldt River Basin population segment of LCT. As such, the Marys River Subbasin has a very high priority for management activities. At least three streams have been found to contain non-native trout species. In 1999, brook trout were found in the lower portion of T Creek and in the Orange Bridge area of Marys River. Brook trout, rainbow trout, and possible cutthroat-rainbow trout hybrids were found in Currant Creek in 1998. An intensive brook trout mechanical removal project occurred along the Marys River, while chemical removal was proposed for the lower portion of T Creek and all of Currant Creek.

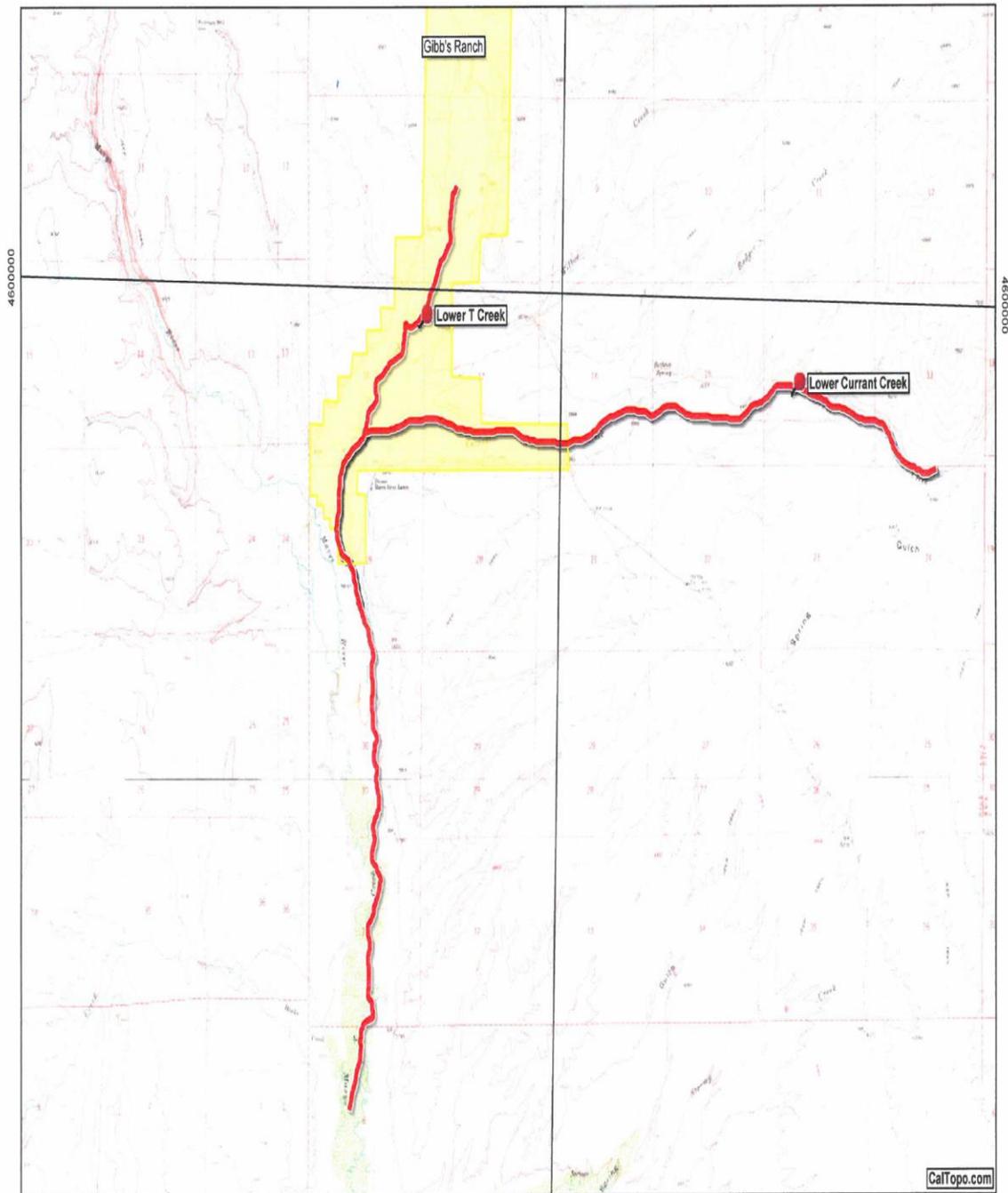
Map 1. Marys River Subbasin



Lower Currant Creek and Lower T Creek are located (T42-43N, R60E) on the west side of the Snake Mountains in Elko County (Map 2). These streams flow through approximately 5 miles of private land owned by the Gibbs Ranch, and 6 miles of public

land administered by the BLM. Elevations range from 5,700 ft at the confluence with Mary's River to 6,300 ft at the upper portion of Currant Creek. The upper portion of Currant Creek was treated in 2013. A post treatment survey to confirm that all non-native fish have been eradicated was performed prior to the treatment of lower Currant Creek.

Map 2. Lower Currant Creek and Lower T Creek Treatment Area



OBJECTIVES and APPROACHES

Objective: Native Sport Fisheries Management

Approach:

- Plan, permit, and conduct the rotenone treatment of T Creek and Lower Currant Creek (Marys River Subbasin) and its tributaries to remove all non-native trout.
- Evaluate the stream through electrofishing surveys for two years to confirm the successful eradication of non-native trout.
- Reintroduce Marys River strain LCT once treatment success is confirmed (possibly as soon as fall 2015) and continue stocking until a population is established (based on population surveys confirming three age classes and natural recruitment).

PROCEDURES

Pretreatment

Several meetings occurred with the Gibbs Ranch, Marys River Ranch, USFWS, and NDOW to coordinate treatment, as well as to set a timeline from the start of treatment to LCT reintroduction. Upon coordination with the various entities, the treatment was arranged for August 19-20, 2014 with pretreatment surveys occurring two weeks prior (August 4-14, 2014). On June 23, 2014, a letter was sent to NDEP seeking a permit for the use of rotenone to remove nonnative fish from Currant Creek. An NDEP rotenone application permit (NVW-39659) was issued on July 3, 2014.

Pretreatment surveys were conducted to document presence/absence of listed, candidate, or sensitive fish species and appropriate actions developed to mitigate the effects of treatment if necessary. No candidate or sensitive species were found. Multiple trips were made through Lower Currant Creek and T Creek to document flows, establish drip bucket (for dispensing liquid rotenone) intervals, examine fish distribution, and locate spring/seep locations. Drip stations and springs/seeps were marked with flagging and a GPS coordinate was recorded so that the locations could be found easily during the treatment.

A safety meeting was conducted among all members prior to treatment. During the safety meeting, all precautions were explained and treatment procedures were assigned. Also, caution signs were posted along the treated portions of Currant and T creeks in an effort to warn the public of potential chemical runoff. Detoxification with potassium permanganate was not needed as the stream went dry before the confluence of Marys River.

Treatment (August 19-20, 2014)

The drip stations were spaced approximately 0.5 mile apart along the mainstem of Lower Currant Creek. Once at their station, the attendant constructed his drip bucket and spigot. A dip bucket was then used to fill the drip bucket with creek water and then the prescribed amount of rotenone, based on the flow calculations, was added using the provided measuring cup. CFT Legumine, which contains five percent rotenone and is EPA registered (75338-2) for use by state and federal fish and wildlife agencies, was utilized. Drip stations started at 9:00 am, were set to dispense 105 milliliters per minute, and ran for approximately three hours. Attendants ran two buckets of rotenone for a total of six hours and each attendant was asked to walk 0.25 miles upstream and downstream of their station removing all fish killed. The same process was performed during the second day of treatment. At 3:00 pm on the last day of treatment, each drip station attendant made sure to remove the flagging and collect all the items they packed in. Approximately two gallons of liquid emulsified CFT Legumine was used for the drip buckets per day, totaling four gallons for the entire treatment. Drip stations could only be used on Lower Currant Creek as there was little to no flowing water in Lower T Creek.

Six sand/spray crews were responsible for covering the entire stream treatment area, applying either sand and/or spray mixture to stagnant pools, springs, seeps or intermittent areas that the drip station toxicant could not reach. The spray rotenone mixture consisted of six ounces of rotenone per gallon of water (five percent mixture), and was applied with a four gallon backpack sprayer. The sand consisted of a mixture of Rotenone Fish Toxicant Powder (7.4% rotenone), gelatin, and sand. The Rotenone Fish Toxicant Powder is EPA registered (655-691). These spray crews were critical in insuring a 100 percent kill by eliminating any refuges. Approximately 12 gallons of liquid emulsified CFT Legumine was used by the sand and spray crews each day totaling 24 gallons for the entire treatment.

Project Participants

Nevada Department of Wildlife, U.S. Fish and Wildlife Service, BLM, Gibbs Ranch and Marys River Ranch.

FINDINGS

Approximately twenty-eight gallons of rotenone was used for the entire two day treatment. Station attendant observations documented a large number of trout within the treatment area, with Brook trout being the only trout species found. No live fish were documented by any of the station attendants after noon on the first day of treatment, and it appears that the project was a complete success.

MANAGEMENT REVIEW

The planning, permitting, and conducting of the Lower Currant Creek and Lower T Creek rotenone treatment was completed. Treatment evaluation will occur in the summer of 2015.

RECOMMENDATIONS

Post-treatment projects will occur in the summer of 2015 and will include spot electroshocking to evaluate the effectiveness of the treatment. Reintroduction of LCT into Lower Currant and T creeks will only commence after a thorough evaluation is completed to make certain of the success of the treatment. LCT from upper T Creek will most likely be the donor source for the reintroductions. Introduction activities will follow the guidelines set in the Reintroduction of LCT section of the Upper Humboldt Species Management Plan. These reintroductions efforts will most likely occur in the fall of 2015

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