

Boulder Creek Colorado River cutthroat trout (CRCT) Restoration

Why Boulder Creek drainage?

Historic, remnant CRCT populations were found in both East and West Forks Boulder Creek. Both remnant populations were originally small and isolated. Isolation and nonnative trout are two of the major factors causing the decline of CRCT. Small isolated populations are at high risk of extinction from catastrophic events (e.g. floods, fires, etc.). Isolation also causes negative impacts to genetic diversity.

The proposed/planned nonnative trout removal and habitat restoration would:

1. Create the largest stretch of occupied CRCT habitat in the Escalante River drainage (15.7 miles).
2. Create approximately 8.4 miles of connected habitat between the West Fork Reservoir and King's Pasture Reservoir.
3. Connect two historic, remnant populations, thereby, increasing the potential to maintain genetic diversity and lowering the potential for catastrophic events to completely eliminate either population.

Such population expansions help to secure the future of the species and reduce the potential for federal listing under the Endangered Species Act.



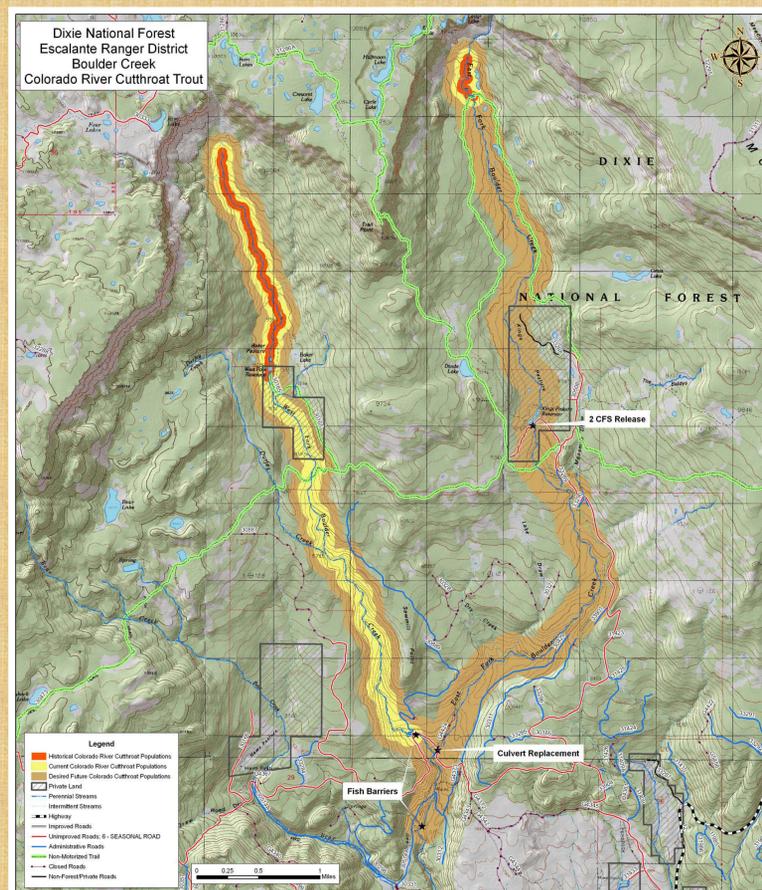
Headwater meadow of East Fork Boulder Creek.



East Fork Boulder Creek below headwater meadow

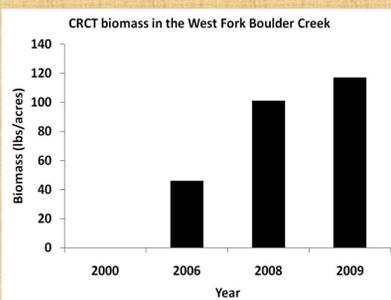
Nonnative trout removal

- Individuals from both East and West Fork populations helped to create the Dougherty Basin Lake brood stock.
- West Fork Boulder Creek from West Fork Reservoir to fish barriers (constructed in 2000) was renovated with rotenone to remove nonnative trout in 2000-2001, and CRCT were reintroduced in 2001.
- Monitoring has shown that reintroduced CRCT are continuing to increase in abundance and biomass.
- Short Lake was renovated with rotenone in 2005-2006; reintroduction success is still being monitored.
- Fish barriers were constructed on Boulder Creek in 2009, approximately 0.5 miles downstream from the confluence of the East and West Forks.
- Proposed project would:
 1. Use the piscicide rotenone to remove nonnative trout from the headwater meadow in East Fork Boulder Creek downstream to fish barriers
 2. Monitor the success of the removal efforts
 3. Allow recolonization of CRCT from upstream and translocate/reintroduce from other core populations or the Dougherty Basin Lake brood stock.
 4. Monitor the success of CRCT expansion.



Habitat restoration

- East and West Forks Boulder Creek are completely dewatered below West Fork Reservoir and King's Pasture Reservoir by hydroplant operations.
- Average annual unregulated flow is approximately 4 cubic feet per second (cfs) in the West Fork and 21 cfs in the East Fork.
- A condition of the FERC relicensing of the Boulder Hydroplant is the release of 2 cfs back into the East Fork below King's Pasture reservoir.
- The flow restoration would return flows to 0.6 miles of completely dewatered stream and improve flows in an additional 4.9 miles of stream.
- Undersized culverts where Forest Road 30166 crosses the East and West Forks Boulder Creek had altered stream morphology, causing both culverts to become perched.
- The perched culverts were an impediment to fish passage.
- In summer 2009 the culvert on the East Fork was replaced using a properly sized box culvert with a natural bottom that will facilitate fish passage.



CRCT biomass in West Fork Boulder Creek above East Fork confluence.



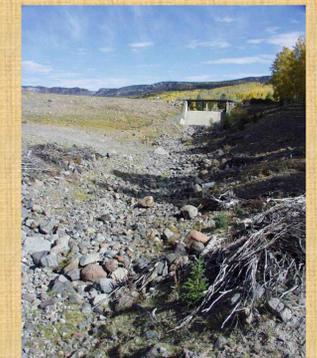
Fish barrier on Boulder Creek



Colorado River cutthroat trout (CRCT) from the Dougherty Basin Lake brood stock.



West Fork Reservoir.



Dry stream channel below King's Pasture Reservoir.



East Fork Boulder Creek cascade.



Fish barrier on West Fork Boulder Creek.



Forest Road 30166 crossing in June 2009.



Forest Road 30166 crossing in autumn 2009.