

West Fork Complex Fire: Witnessing Real Ecosystem Recovery

I have had the responsibility of monitoring the water quality and stream ecosystem impacts from the 2013 West Fork Complex Fire on behalf of RWEACT as a part of my PhD research.

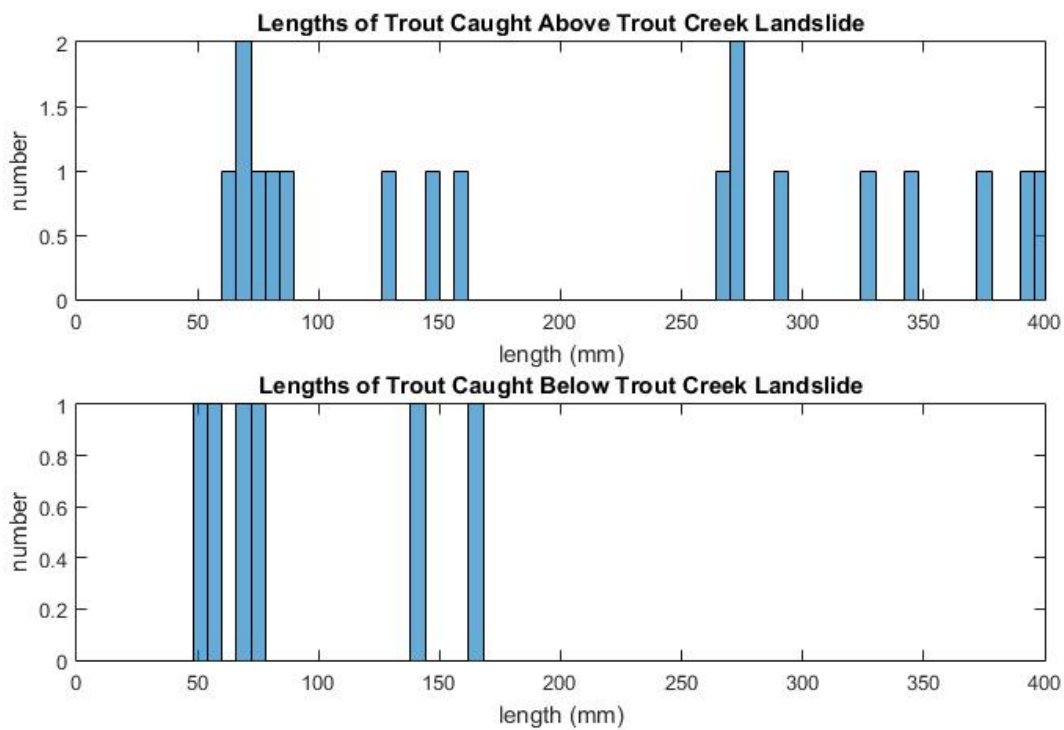
Monitoring the water quality along the Rio and its tributaries is a responsibility I have taken with joy and honor; Creede is a second home, to be able to work in the Rio Grande has been a dream. I began monitoring water quality along the Rio Grande over the fall and winter after the fire and with what is now 6 stations on the Rio, one on the South Fork and 4 stations in burn impacted tributaries. RWEACT wanted to know if there were any water quality effects to mitigate and what were the long-term impacts. I want to share a quick summary of what I have seen in the years since the fire.

Through the extensive water quality monitoring along the Rio my team from the School of Mines and I learned that the Rio is a resilient river. Only 10% of the watershed was burned, meaning the Rio is fed by many more streams that were not impacted by fire. There were only minor water quality impacts along the Rio, mainly turbid water. The insect populations remain healthy, and the fish populations survived and are thriving. In fact, last year the Colorado Parks and Wildlife did a survey of the trout population between Creede and South Fork and found that the population was higher last year (the year after fire) than it had been in 9 years. However, there were two fish kills as a result of the fire, one on Trout Creek and one on the South Fork of the Rio. In both situations, rain events caused erosion of hillsides that then delivered sediment to the rivers. I was there for both monsoon events and was able to test the water to show that the concentration of sediment in the water was high enough to clog fish gills and cause them to suffocate.

And now the recovery, I visited the site of the Trout Creek landslide with Dr. Andrew Todd from the USGS and Deputy Billy Fairchild on September 25. We used electrofishing to conduct a trout population survey. Fish tend to stay in a small area and are territorial with “holes”. You can get an idea of a fish’s age by measuring its length. From the data we collected, we found fish of age 0, 1, 2, 3, 4, and 5 years above the landslide, and only 6 fish age 0-1 below the landslide. The older fish had been wiped out from last year’s landslide, but new fish have hatched, are surviving and the creek will return to a thriving trout stream.



A 1 year old German Brown from below the Trout Creek landslide and Dr. Todd and the Deputy with a large 4 year old German Brown trout from above.



Fish lengths from the fish caught above and below the Trout Creek landslide. There are more fish of every size above the landslide and only a few small, new residents below the landslide.