

Trinity River Guides Association Float with TRRP Program Partners

Float Date: Monday, August 19th, 2011

Location: Diversion Pool to Steel Bridge

Conversation and Dialog Notes – Final Version (9-22-11)

Guide Participants:

Travis Michel
Steve Townzen
Scott Stratton

TRRP Program Participants:

Aaron Martin, Yurok Tribe
George Kautsky, Hoopa Tribe
Eric Wiseman, USFS
Alex Cousin, Trinity County RCD
Charlie Chamberlain, USFWS
Arnold Whitridge, TAMWG
Dave Gaeuman, BOR
Andreas Krause, BOR
Brandt Gutermuth, BOR
DJ Bandrowski, BOR
Kent Steffens, BOR

Discussion Items (comments, observations, or questions):

Above New Bridge

- Stopped below weir hole/diversion pool and discussed gravel augmentation program both recent perspectives (Dave) and historical perspectives (Andreas).
- Travis had a question in regards to how much Coarse sediment has been added to the river over the past several years and how is that determined annually and in regard to water year type?
- Discussion regarding the annual amount of gravel that should be augmented. Dave reports that 10-15,000 cubic yards annually is what has been determined appropriate for our flow regime and logistical considerations. 10,000 is a scaled down average from the original Flow Evaluation Study recommendations of 60-70,000 on a Wet year designation which is arguably not feasible based on implementation logistics and reach wide constraints.
- Dave discussed the theory of adding gravel for quick influx vs. deficit control. Dave does not feel that we are in a deficit and based on recent analysis which suggests 4-7000 cubic yards is more appropriate.
- Discussion continued regarding the process/protocol that is in place to determine the management actions regarding gravel augmentation program in relation to the Record of Decision (ROD). Adaptive management is the tool set that drives the process toward action; set a hypothesis and test it over time and make adjustments based on analysis and best available science.
- Dave explained that the amount of gravel is determined by site specific conditions and characteristics. Augmented gravel at our rehab project sites is much different than high flow gravel injection.
- Question was asked about how much control our contractors have on the amount of gravel placed on-site. It was explained that we have on-site government representatives that make site specific final determinations not the contractors or equipment operators.

Lewiston Reach (New Bridge to Old Bridge)

- Observations of how much change/evolution has occurred throughout this reach, some of the deeper holes (deadwood area) were being maintained.
- Observations were made from quick snorkel surveys that there was some adult “springers” were holding in the pools and at the convergent flow area near the outlet of cableway (miller) side channel.
- New mid-channel bar had formed upstream of cableway and downstream of side channel entrance. General observations that the bar looked great and that spawning should increase across this new feature area. Appears that is feature is still evolving and would likely change considerably over time.
- Cableway (miller) side channel entrance looked shallower compared to post construction, but still was maintaining itself and appeared that it would persist through the winter base flow period. A lot of vegetation was removed (mechanically or hydraulically) on river left since construction in 2008.
- Recommendations from guides that the TRRP should strategically place 5-6 ft boulders throughout the river, but especially within the Lewiston reach for cover and hydraulic diversity.

Below Old Bridge (Hoadley Gulch)

- Stopped and had lengthy discussion on constructed gravel bar on river right. Observed how 11K cfs changed this area dramatically, setting up a new transverse bar. Also observed constructed side channel maintained upper inlet, but lower inlet had filled in creating a backwater eddy in the side channel.
- Question came up on how far does gravel move during a high flow release? Discussed that the gravel typically moves from bar to bar not miles down the river. Also discussed how the new bar at Hoadley Gulch formed from the upstream gravel augmentation had transported to this area and is starting to develop a new bar feature.
- Steve asked how this Lewiston/Hoadley Gulch area looked to the TRRP. Eric answered that in general good, better spawning, less holding, great juvenile rearing area.
- Scott mentioned that there definitely was not as much holding, more browns, and also discussed how shade is critical for having good fish utilization.
- Question was asked by TRRP, where on the river is it important to have adult holding, should we be looking at it on a reach scale level or be focused on each existing pools. How should it be partitioned out?
- Steve encouraged us to be looking at holding water in our specific design and throughout the design process. Also encouraged us to be very focused on not destroying existing/functioning holding waters.
- Scott said that the rule of thumb for how far apart adult holding pools should be throughout the upper river is approximately 1/2 mile.

Cemetery Hole/Sawmill Reach

- Just above cemetery side channel entrance within the flat water/pool area, there was a suggestion of constricting the right side of the channel, since it is over-wide currently. Observation was made that the river has deposited some new gravel at the existing gravel bars on river right and trying to constrict itself.
- Observation that the water surface elevation seemed lower, also mentioned that this pool is good brown trout habitat.
- Observation that the cemetery side channel inlet was taking on more water than historically.
- Observation that the area just above cemetery hole looks good and could become more of a spawning reach, this area has been called the “pungees” since it has a lot of dead snags that look like pongee sticks.
- Observed that the hole just above cemetery hole has maintained itself through the high flows.
- Observed cemetery hole has filled in at least 3 ft since the high flows and has adjusted its hydraulic condition, adjusting the scour location.
- Eric snorkeled through the hole and did not observe any fish utilization.

- General observations throughout the sawmill reach that there was both subtle and significant changes since the high flows. Constructed gravel bar on river left (upstream) had maintained, but the downstream bar had mobilized downstream.
- Suggestion was made that more boulders should be added to the mainstem in this section for diversity.
- We did not look at cemetery side channel during the float, although did see various outfall discharge locations that had changed from years past.
- Sawmill injection area next to river right cliff is still filled in and doesn't appear that much scour took place. Approximately 1-2 ft was scoured off the top bringing the top of gravel below water surface at 450cfs.
- Suggestion was made to re-constrict this river left section and force it back into the bedrock hole area. Discussion took place on how to re-constrict, possibly more Coarse sediment with larger materials to minimize transport, possibly a wood jam structure to push the flow back into the bedrock wall.

Lower Sawmill/Rush Creek Pool Reach

- Observations were made that some of the upper bars are becoming more pronounced and growing at a faster rate. Some of these bars are forcing the base flow water around more and is much more diverse.
- Observation that the water surface elevations throughout this reach appear to be lower.
- Rush Creek Pool area has been scoured down to bedrock and very little aquatic vegetation is present.
- Historic Rush Creek side channel river-left (backwater slough – old hatchery rearing area) has not opened up and still remains a static backwater area with little habitat value. This area is currently the site of the upper Rush Creek rehabilitation project area, but due to landowner constraints this has been placed “on-hold”
- Rush Creek delta area has changed dramatically and a substantial amount of gravel has been deposited and formed into new bar features downstream of confluence area.
- Observation of more erosion has taken place on river left bank downstream of rush creek confluence.

Gold Bar/Dark Gulch/Bucktail Reach

- Observation from earlier this year that the constructed floodplain at Gold Bar was inundated at a lower discharge than post-construction. This suggests that a new hydraulic control has been created somewhere in this section and has caused the water surface elevation to increase on top of the floodplain at approximately 2500-3000 cfs level.
- Observation that the Gold bar side channel has evolved significantly since construction and now has a new profile and planform pattern, the bottom elevation is higher, and thus making the channel shallower.
- Observation that a large amount of new gravel has been deposited on river right, Gold Bar floodplain fringe.
- Question – Where did all this gravel transport from? Most likely from the Rush Creek delta area.
- Discussion regarding how far can Coarse sediment gravel transport in one peak flow such as the 11K cfs.
- Natural side channel (Dark Gulch) river right has maintained itself but the entrance hydraulics appear to have adjusted with more new gravel that has deposited and thus extending the entrance upstream farther.
- Observation at the bottom end of natural Dark Gulch side channel, backwater outlet (Blue Lagoon) area has maintained and is approximately 10-15 ft deep and is holding a large school of “Springers”.
- Observation that the downstream Dark Gulch constructed features have evolved negatively since construction and downstream side channel entrance has almost closed off.
- Observation that the upstream Bucktail reach has maintained fairly static through the high flow release.
- Observation that Bucktail hole below Bucktail bridge has scoured significantly and is one hole on the upper river that is now deeper after the high flow than before. The constriction of the bridge induced this scour.
- Observation that the historic Bucktail hole next to the bedrock outcrop has maintained its depth, but the “tail-out” has evolved to a mid-channel bar split flow that is dramatically different then previous years.
- Question was asked about where this influx of gravel transported from to form this new mid-channel bar feature? It is hypothesized that it may have routed from the scour below the bridge or upstream farther off the bottom of the bed. More analysis is needed to determine this influx.

Lowden Ranch Reach

- Floated through the new constructed upper side channel and backwater habitat area. General observations and comments that this area will be great rearing habitat and will be a high production area.
- Observation that the old steelhead holding water upstream of the forced meander (IC2) island area has increased and will fish well. This was a major concern before the high flow, but has evolved for the better.
- Observation that the forced meander control that was in-place from the truck crossing area has scoured and is running faster and has changed the upstream hydraulic conditions favorably.
- Discussion at the new gravel bar forced meander island area (IC2) has maintained its structural integrity and provided the needed topographic steering during high flows. The fines were eroded off the top, but the fines still remain below the cobble surface and will continue to revegetate itself overtime. Clump plantings are doing well and held up through the high flows. Alcove at the downstream end has filled in slightly and has partly covered log structure. Log structure in alcove was placed to prevent head-cut and was successful in providing this structural condition.
- Discussion regarding high flow gravel injection at the Lowden reach, sediment monitoring by GMA, and two-dimensional hydraulic modeling prediction analysis done prior to high flows by Dave Gaeuman. Dave explained the process and what was done and what we will learn through this additional analysis work coupled with the realtime monitoring results from GMA that will help inform management actions for future gravel augmentation and high flow gravel injection volumes and methods.
- Observation that the Lowden reach looks great and has increased steelhead holding water. This reach has evolved for the better and is much more complex and dynamic than prior to rehab construction activities.
- Observation that the log jams appeared to be providing areas or rearing and holding both and have helped induce scour holes through the high flow event. Guides said that they have been hooking into some fish along the log jam structures and are looking forward to the salmon run this fall to test their performance.
- Observation that the downstream "islands" (anastomosing channels) looked much better after the high flows have scoured the bed, eroded the banks, and scoured around the wood structures. The evolution appeared positive and may improve the steelhead fishing in this reach.
- Observations that the log jams were holding fish from this visit and prior visits.

Grass-Valley Creek Trinity House Gulch Reach

- Observation that this reach has changed dramatically after the high flows with deposition of Coarse sediment gravel forming a new sinuous channel meander pattern upstream and downstream of Grass Valley Creek (GVC) confluence.
- Observation was made by one of the guides that this reach will fish much better than previous years and has formed into "sexier water", turning a cesspool below GVC into a swing fishing area for steelhead.
- Discussion on whether or not there should be additional gravel augmentation within this reach. The guides suggested that there was enough gravel in this reach and that adding more may have a negative impact.
- Observation that the Trinity House Gulch (THG) constructed side channel closed off due to the influx of gravel deposition in the side channel inlet
- Stopped at the downstream end of the THG project and discussed the historic steelhead water that was destroyed due to the constructed gravel bar on river left. Discussion surrounded this issue and the guides concern of some of our projects containing designed features that are in areas of existing adult or juvenile habitat that is of good quality. Discussion continued and one of the guides said that he hopes this downstream section will hold and fish as well as it historically did now that the hydraulics have changed and is much shallower than before construction.
- Observation was made that since the TRRP opened this area up by removing vegetation and building access roads that there has been an influx of recreational fisherman using this reach and accessing it by foot. They are coming in from Browns Mountain Road.
- Observation of six browns in the constructed wood jam at the downstream end of the THG side channel.

Poker Bar Reach

- Observation that the deep hole near Ponderosa Lane (Scott's Hole) has maintained its depth through the high flows and is still holding fish well.
- Observed a lot of wood/trees that has fallen in throughout this reach during the high flow event this past year. In general a lot of wood is in the river now, where in the past this the wood was absent.
- Observed some new gravel bars forming and old ones that have become more pronounced.
- Poker Bar Hole (Stott Hole) has maintained its depth through the high flows.
- Discussed Paul Cantanese' isolated pond area and a potential habitat development project in the future.
- Throughout this reach the hydraulic controls have migrated down river farther than in past years.

Limekiln Gulch/Upper Steel Bridge Reach

- Observation that more gravel had been deposited in this area than expected due to the lack of source material upstream in this bedrock confined reach. Discussion surrounded this topic and the question of how this material was routed into this reach, upstream source or from the bed...?
- Stopped and looked at the proposed Limekiln Gulch Rehabilitation Project site starting next to the old "Feathered Edge" project on river left. DJ, Dave, and Charlie explained the design features, goals and objectives, and expected evolution. Discussed existing mainstem steelhead/salmon habitat and how it may be affected by the project. Discussed lack of access and cultural resource concerns for the spoil location on river left. Discussed proposed side channel characteristics, location of inlet and outlet areas, and overall scale of project in relation to existing side channels on river right.
- Floated through downstream split flow channel at the bend and looked at the convergence area of the two channels. There was some deposition in the deeper hole and had filled in approx. 2-3 feet.

General Observations/Conclusions/Wrap-Up Conversation

- Through all the discussions and observations, there was a much more positive trend than negative. The 11,000 cfs high flows definitely did some work on the river, moved a lot of Coarse sediment gravel, and altered the river in several locations (both for the positive and negative). Bank angles have generally been decreased due to high flows. Lots of new trees have fallen into the river throughout the upper river due to high flows. Formation of new sand beaches and increase in size to several existing sand beaches (increased juvenile lamprey habitat).
- Need to preserve, maintain, and construct adult holding habitat (deeper pools) in our future rehabilitation project sites. This needs to be a focus and have more awareness of this concern and address this on a technical level.
- A lot of rebar in the river from monitoring/construction activities. Need to be more aware of this concern and come up with some alternative locations.
- A lot of gravel in locations that were unexpected and at locations where we have not augmented or constructed project sites.
- Need to look at the river on a broader timescale and have a multiple year perspective in regards to both positive and negative changes.
- Stay away from the homogenous gravel at the project sites and not build "Alluvial Deserts" in the future.
- There has been a shift in the depth of the river, has this been caused by a lower water surface elevation or gravel deposition?
- Observed a lot of good steelhead holding water (runs) throughout the upper reach.
- Discussions regarding the Bureau of Reclamation reservoir draw down concerns. Will there be a safety of dams' release? And is it possible to maintain a constant 450 cfs flow through the November?
- Discussed the need to do another float this fall (September) from Indian Creek to Evans Bar.

