

Design Team/IDT Meeting Notes

01 February 2018

Attending in person: James Lee (TRRP office/HVT), Steve Layman (BLM), Josh Boyce (USFWS), John Bair (McBain Associates), Nic Sabo (McBain Associates), Wes Smith (OAI/NMFS), Conor Shea (USFWS), Robert Franklin (HVT Fisheries), Trevor Morgan (DWR), Aaron Martin (YT), Damon Goodman (USFWS), Mike Dixon (TRRP office/Reclamation), Andreas Krause (YT), Mark Smelser (CDFW), Ben Snyder (McBain Associates), Phil Fishella (USFS), DJ Bandrowski (YT), Todd Buxton (TRRP office/Reclamation)

Attending via WebEx: Jenny Norris (USFWS), Joe Polos (USFWS)

The meeting opened with introductions and then there were some shifts to the agenda to accommodate a town hall presentation by the Secretary of the Interior.

The first topic was a series of presentations by the subgroup working to refine metrics for comparing design alternatives and assessing design performance. Damon led off with a presentation where things stand with fish metrics. There will be data collection this year at Deep Gulch/Sheridan Creek to compare real to modeled performance, and to collect pre-construction data at Chapman Ranch. He presented on both rearing habitat spawning habitat metrics. Rearing habitat metrics proposed are to use capacity and flow-to-habitat relationships. A key component of habitat for alternative comparison is a shapefile of estimated cover, which opened up some back-and-forth.

- Andreas asked if cover for design comparison would be as-built or assuming some level of success following revegetation (e.g. cover after 5 years). This is a fairly important difference, but as it is the metrics group is proposing to use as-built cover to minimize uncertainty about reveg success and wood recruitment and loss.
- Robert asked what constitutes cover for little bitties (does it include coarse sediment). Aaron said that the cover estimates for design would be done at a coarse scale. The protocol for cover is established and substrate can be cover for fry, but Damon clarified that cobble is lower value cover than wood.
- Jenny asked whether cover mapping needs to be refined. Daman responded that no, the mapping methodology for cover is clear but the theoretical cover maps for design alternatives need to be developed. One takeaway is that this will require earlier development of wood and revegetation designs, which are often done well after the 30% level when alternatives are whittled down.
- There was discussion of how flow may influence capacity of different alternatives in varying ways – do alternatives' flow-to-habitat relationships cross as flows increase?

Presentation shifted to spawning habitat metrics which include depth, velocity, substrate, and distance to slope transition.

- Conor proposed weighting the design analysis to incorporate uncertainty and the reliability of design features, such as a side channel that provides a high amount of habitat but has a moderate probability of closing
- There was further discussion of the value of predicting revegetation success because there is a big difference in the quality of cover provided by open unvegetated floodplain and riparian forest. Conor suggested that a qualitative assessment may have more value in predicting a

future state; Ben mentioned that a probability density function could capture uncertainty in a quantitative way.

- It was asked whether the hydraulic modeling methodology was important for calculating capacity, but it sounds like the modeling method is flexible as long as the folks calculating capacity can interpret the output.
- Jenny reminded everyone that the metrics will need to be reviewed by other WGs and the IDT.

Geomorphic metrics were the subject of the next phase of discussion. Dave provided an overview of how one could calculate a metric for floodplain connectivity, channel complexity (variability in bed elevations), and unit discharge. He feels that channel complexity has site-specific applications. He suggests unit discharge to show where the water is going, as opposed to stream power because that requires knowledge of water surface slope, or shear stress because of the subjectivity it introduces in calculating roughness.

- Ben inquired about how unit discharge can be applied to alternative comparison. Damon asked if it could be used to evaluate the potential for feature persistence or the likelihood of deposition or scour.
- There was discussion of the channel complexity metric and how one would have to be careful with how it was applied and interpreted (e.g. a really flat shallow channel with big rocks in it would have high variability)
- **The discussion/refinement of these metrics should continue in the Physical WG. Once that is done, they should move through IDT and be adopted by the Design WG for use in future projects.**

Riparian metrics were the next topic. Unfortunately, at this point Mike Dixon (who was taking notes) stepped out for the Secretary's town hall presentation. **Will someone who was there kindly fill in some notes for that part of the discussion? John, perhaps?**

Next up was an update from the federal design team on Sky Ranch conceptual designs. Wes elaborated on rough sketches he had provided to Dave regarding some additional ideas. These emphasized the addition of a swale with wood catchers and bar features associated with the downstream side channel, further opening up of the downstream side channel and reactivation of the island, and another alternative upstream associated with the high flow channel/riparian area.

- Robert asked why we are specifically avoiding impacts to the existing pools; answer was that the channel itself isn't that bad in Sky Ranch, so emphasis is on floodplain function.
- Robert also asked about the intent of the designs, which seemed to be focus on creating habitat for large wood. John echoed/added to this sentiment, expressing concern about removing existing riparian vegetation in order to create space to rack government wood. This led to some discussion of the operating conceptual model regarding residency and return of wood
- Andreas started a brief discussion regarding deposition in the cut floodplain.
- Todd presented some additional thoughts/concepts, which were essentially permutations of the dominant concept of wetting portions of the terrace and accentuating the nascent bend downstream of the head of the existing side channel.

The habitat team presented on their findings from 2017.

Bucktail showed a substantial increase in habitat, but the habitat dip remained for optimal habitat (albeit at much higher levels at the same flow).

Lowden showed a slight reduction in the resurvey from the post-construction survey, but nevertheless, both the optimal and total habitat still showed a significant increase from pre-construction. Noteworthy observations included the increase in D,V habitat downstream of the gravel augmentation site and the increase in flow over time at the top of the fish heaven side channel complex. This led to some discussion of “what did we do right” there.

Reading Creek showed some settling of post-construction habitat but still a large increase over pre-construction. Josh also noted some evidence of fluvial processes (deposition and scour) that were evident at that site.

Hocker Flat shows an odd inverse relationship between optimal and total habitat, but this is largely irrelevant as there is almost no habitat there. This was in no small part a result of there being no real in-channel work associated with that project.

Ben then provided an update on Chapman Ranch. There has been some minor refinement of the overall design which presented at a design WG meeting last year, with emphasis on phasing of the project to account for land ownership, access, and spoils areas while ensuring feature functionality. Each phase can be implemented in the absence of the others. There were some minor adjustments to point bars in meanders to increase shear stress; the project overall is emphasizing deformable features. Ben walked the group through the phases and associated features. Phase 1 is all downstream, BLM land and includes 2 meanders with alcove and floodplain habitat; it will require 70k yds³ of cut. Phase 2 is almost entirely associated with the left bank side channel, which can mostly be constructed out of the summer window because it has very little in-channel work; it will require 90k yds³ of cut. Phase 3 is an upstream constructed meander with some associated floodplain lowering; it requires 40k yds of cut. Phase 3 might be a little challenging as it requires access and some construction on the Roundhouse property whose owner may not be interested in working with the program.

Last but not least, Andreas gave a detailed overview of the existing conditions at the Oregon Gulch project site and presented 10 different conceptual designs which were developed either by the Yurok design team or previous design efforts for the site. There were some fascinating, outside-the-box ideas, and it is noteworthy that the property owners on river right who own most of the mine tailing-impacted area are excited to work with us. Andreas directed people to look at the concepts as a range of different things that could be pursued rather than discrete alternatives, aka the Mr. Potatohead approach.

Please provide any additional concepts or feedback on the OR Gulch conceptual designs to Andreas NLT COB on 23 February.

Brandt will circulate a summary paper about previous mercury findings in the area in light of the potential issues associated with the OR Gulch dredger ponds.

The site revisit discussion and design report discussion were both cut from the agenda in the interest of time. They will be discussed in a future meeting.