

BSWG: Crooked River Subgroup
January 8, 2014, 10AM - Noon, Prineville City Hall
Draft Meeting Notes

ATTENDING

Mike Britton, North Unit Irrigation District	Kimberly Priestley, WaterWatch of Oregon (by phone)
Steve Johnson, Central Oregon Irrigation District	Betty Roppe, City of Prineville
Mike Kasberger, Ochoco Irrigation District	Amy Stuart, ODFW
Eric Klann, City of Prineville	Mike Tripp, Trout Unlimited
Garry Sanders, Crooked River Watershed Council	Chris Gannon, Crooked River Watershed Council
Nancy Gilbert, US Fish and Wildlife Services	Brett Golden, Deschutes River Conservancy
Dan Bruce, Terrebonne Water District	Bonnie Lamb, Department of Environmental Quality
Kate Fitzpatrick, Deschutes River Conservancy	

Also present was Mary Orton, The Mary Orton Company, LLC (facilitator).

AGENDA

The group used the following agenda as a guide during their meeting:

1. Welcome
2. Introductions
3. Overview and approval of agenda
4. Instream flow needs: questions regarding restoration
5. Instream flow needs: existing science
6. Next Steps
7. Meeting Evaluation

WELCOME, CHECK-IN, AND AGENDA

Betty convened the meeting and welcomed everyone. Attendees introduced themselves. Mary reviewed the agenda and the group agreed to it as presented. Kate described the level of effort needed for the Basin Study Proposal, which is due February 14. The Proposal will be fairly high level. She said that details can come later, but some sense of whether we would like to put some resources into updating water demands would be useful. She said she would send members copies of others' proposals that had been funded.

Kate said that she would help connect Dan Bruce from Terrebonne Water District with the groundwater subgroup, as the District has mitigation needs. Mary clarified that the following BSWG subgroups exist: Deschutes, Crooked, Whychus, Groundwater, and Deschutes Instream. There was some discussion about whether the Deschutes Instream group would address Crooked instream questions. Kate suggested it was up for discussion, and said she thought it may be useful in the Crooked to discuss instream needs within the Crooked subgroup. This can evolve as needed and as the group directs. There may be value, in any case, in ascertaining if the Deschutes Instream Subgroup process or methodology on instream issues would be useful in the Crooked.

INSTREAM FLOW NEEDS: QUESTIONS REGARDING RESTORATION

Garry, from the Crooked River Watershed Council (CRWC), gave an overview of ecological-flow questions that CRWC has brainstormed. He first mentioned existing data, including the following:

- CRWC has completed a Watershed Assessment for the lower Crooked River.
- NRCS completed a Hydraulic Assessment in 2009 for the reach between Highway 126 to the Lone Pine bridge. This identified geomorphic features, including pool depths, riffle depths, and channel features.
- Mid-Columbia Steelhead Recovery Plan.

- DRC and The Nature Conservancy funded a Crooked River Ecological Flows study, contracting with Watershed Sciences to compile existing information on flow-ecology relationships. (This report was never finalized.)
- CRWC has solid water quality monitoring data from 2009 from 33 fixed locations across the entire watershed, including about 20 locations in the lower Crooked River. This data is accessible on their website. He said the purpose of this project was to determine unanswered questions, set goals, and determine costs.

Garry reviewed his handout, which he said was an informal brainstormed list of questions whose answers would be nice to know (see Attachment 1). There was discussion on a question raised in the document, as follows: "What is the amount of water (in cfs) of all of the water rights upstream of Prineville Reservoir? This might be a realistic upper limit for summer flows in the Crooked downstream of Bowman dam considering that almost all water from the Crooked is used during the irrigation season. Thus, the total amount of water rights could serve as an 'upper limit' to consider for increased flows in the Lower Crooked. This may not be the ideal or final flow, but it would serve to provide us with some information (reference at least) of what the total flow could be without any irrigation occurring in the upper watershed." There was discussion that this is not ideal because the water rights often exceed available at times in the summer.

Garry said that this issue is complicated. Mike Kasberger said that per the contract, the minimum flow from Bowman is 10 cfs. Kimberley said that technically, the minimum is 10 cfs in the winter, and there was no authorization to release water in the summer. She said that her understanding was that OWRD worked with OID to manage for a minimum of 20 cfs, if possible, right below the bridge; but that this was not a legal requirement. Mike said they keep a minimum flow past the bridge, but there is no official agreement or coordination with OWRD.

Someone posed the question, "What is the realistic upper limit for summer flows in Crooked?" Above the reservoir, most streams are over-appropriated, and the water entering reservoir in the summer can be zero. If the goal is to approximate the pre-dam hydrograph, we don't know what is going in to the reservoir in order to figure out what should be coming out.

Another attendee said that this question could be answered by OWRD, and that it could be more than what is now in the river. If the total is 1000 cfs, it doesn't mean 1000 cfs would be flowing in the summer because of over-appropriation. Perhaps this group should have low- and high-end goals. Kate said that people have speculated for a long time about how much water historically flowed in the river, as well as flood plain changes; and these questions are difficult to answer. Mike said it would be very labor intensive to determine this. We need to be careful not to use our entire budget to answer this question.

Kimberley suggested that the group could use, as a basic number, the flows that agencies have established to meet the needs of fish species. She said she thought this would be a different number than the natural hydrograph, though it could be the same.

- Kimberley asked whether the group needed to come to agreement on the list of questions. Garry said he didn't think so. He said the watershed council has been working with landowners for more than ten years and they had no agreement on these questions. He thought some might be potential questions to answer with the Basin Study. Amy said she thought that WRD could answer the water rights question.

One possible study that was identified for the Basin Study was to identify the instream flow needs by reach and time of year for key species.

INSTREAM FLOW NEEDS: EXISTING SCIENCE

Amy Stuart presented a PowerPoint that describes the PHABSIM/IFIM work Tim Hardin of ODFW has done in the Crooked, as well as some scenarios it ran as an exercise related to the Crooked River legislative effort. Her presentation was as follows:

PHABSIM/IFIM (Instream Flow Incremental Methodology) is a reliable model to show the relationship between fish habitat and flows. It considers the life history of relevant species as it relates to flow. It calculates weighted useable area, or WUA. In the Crooked River, many stakeholders were involved with the study, including the irrigation district manager.

The study was originally done for redband trout. ODFW updated it for juvenile steelhead in 2001 using the original transects. Benefiting steelhead would also benefit redband and Chinook. If one were to redo the IFIM, new transects would be picked for steelhead.

The IFIM was broken down into several reaches. PV1 (Prineville Valley 1) could be used as the priority reach, because if you restored flows in PV1, you would benefit most of the other reaches. The optimal flow for juvenile steelhead was identified as 140 cfs.

There was a discussion of how to prioritize flow targets that cover the most limiting factors and could take into account multiple species (i.e., a fall pulse flow for spawning Chinook). There were questions about low existing flows in PV1 on the graph (20 cfs in a wet year; 10 cfs in a dry year).

Action Item: It was agreed to set up a meeting with Tim Hardin to ask questions about this presentation and gain shared understanding.

There was a discussion of having an adaptive block of water to manage for fish, with or without successful Crooked River legislation.

Due to time constraints, Bonnie Lamb gave an abbreviated overview of DEQ's HeatSource model and how they have used it in the Crooked River.

The group ran out of time and agreed it wanted to take a closer look at these presentations again with more time for Q&A and discussion.

SUGGESTED NEXT STEPS

- Identify the true problem statements for this river.
- Spend more time on some of Garry's issues.
- Follow-up more with Amy, Bonnie, and Tim.
- More discussion of what we heard today.
- Sent Amy's PowerPoint to everyone.
- Mike Kasberger might want to meet with Tim Hardin to address some of the flows issues from his study.

MEETING EVALUATION

Mary Orton reminded the group to fill out their meeting evaluation sheets, which invite one piece of feedback about what they liked about the meeting, indicated below with a plus symbol (+), and one piece of feedback about what they would like to change for the next meeting, indicated with a delta symbol (Δ). Below are the results of this exercise. Each check mark (\checkmark) indicates that someone endorsed a previously mentioned item.

+	Δ
+ Good conversation.	Δ We either need more time or less material.
+ Good communication.	Δ Start earlier so we don't have to rush. Or start at 1 pm and go until we're done.
+ Openness.	Δ Seems we are overloading agendas or getting off track with time? Rushing through items when questions need to be asked/clarified.
+ (Relatively) open questions between parties.	Δ Probably need more time.
+ Good interchange of information; facilitation helps.	Δ More time. \checkmark
+ Thanks for trying to keep folks talking with open dialogue.	Δ We need to hone in on the "problem statement(s)" for the Crooked. Is it only flow, temperature, and fish interactions?
+ Very good technical data presented to set the stage for further discussion.	Δ Better dissemination of materials prior to meeting.
+ Very informative in multiple ways.	Δ Clearer expectations of what should be decided now and what can table for later.
+ Presentations and all stakeholders present.	Δ (Nothing noted.) \checkmark
+ Presentations.	
+ Make slides available.	
+ Lots of information.	

The next meeting was set for January 22nd 9:30-noon.

The meeting was adjourned.

Attachment 1: Brainstormed Questions from Crooked River Watershed Council

Questions for the Crooked River Sub-group of the Basin Study Work Group (BSWG)

Ecology Flow Questions

- What is/are the target reach(es) of the Crooked River for adaptation and mitigation strategies (e.g. Crooked River Canyon (RM 70-57), Upper Valley (RM 57-47), Lower Valley (RM 47-29), Lower Canyon (RM 29-1)?
- What are the target fish species for the adaptation and mitigation strategies: non-anadromous redband rainbows, anadromous redband rainbows (steelhead), Chinook salmon, some combination of all three?
- What are the selection criteria for the mitigation target reaches and target species?
- Is summer water temperature the limiting factor for target fish species in the Lower Crooked? How has the summer water temperature been empirically evaluated? What factors in the watershed limit this evaluation? Could it be low winter flows which limit fish production? Where does the bottleneck occur -- e.g., what habitat stressor is affecting what life stage of fish (egg, juvenile, adult, or all life stages)?
- Riparian vegetation – there is little native woody recruitment within the Lower Crooked due to altered hydrology and sediment routing. Could this be changed with flow pulses at critical seeding/dispersal times?
- If flows are changed, where will sediment come from? Ochoco and McKay Creeks do not provide much sediment to the system to build depositional areas. Is there a possibility of dredging parts of Prineville Reservoir and moving sediment downstream (i.e., bedload restoration)? This would be extremely costly and technically may not be feasible, but should it at least be discussed? There are other case studies of similar ideas on the Trinity River (USBOR, CA) and the Applegate River (USFS, OR).
- What is the value of having site potential data for riparian vegetation, and where do we already have that data?
- What is the amount of water (in cfs) of all of the water rights upstream of Prineville Reservoir? This might be a realistic upper limit for summer flows in the Crooked downstream of Bowman dam considering that almost all water from the Crooked is used during the irrigation season. Thus, the total amount of water rights could serve as an “upper limit” to consider for increased flows in the Lower Crooked. This may not be the ideal or final flow, but it would serve to provide us with some information (reference at least) of what the total flow could be without any irrigation occurring in the upper watershed.

Water Quality Questions

- DEQ has a water temperature model based on flow for the Lower Crooked River. Will they be willing to work collaboratively on the project using their model? Has their model ever been calibrated using measured water temperatures (we have approximately 3-5 years of water temperature data that could be used to calibrate the model based on different flows)?
- If flows are increased, what is the target for water temperature or other environmental standards? In what reaches? And, during what times of the year based on critical life histories of target fish species?
- Are there other potential water quality concerns besides summer temperature?
- Is there a reference river (similar watershed size, similar hydrograph, similar climate, etc.) that already produces the flows deemed optimum for the Crooked River, how does the temperature there compare to the modeled temperature for the Crooked?

LWD (Large Woody Debris)

- How much and how valuable to target fish species is LWD that may have been significantly reduced due to Bowman Dam interception? Is LWD even a limiting factor in the LCR and if so, how can we ascertain the appropriate levels and how can these be met under current conditions?

Fish Life Histories

- What are the critically limiting life history stages that are provided by the LCR? Given the target fish species has been identified and agreed upon, how does the LCR support this species in particular; what life stages are most limited? How can flow changes (from current) over a full year be made to address this limitation? Is flow modification the most important or are there other restoration actions that provide equal or better

improvements either alone or in combination with flow increases? What combination of active habitat restoration and strategic flow increases yields the greatest beneficial return?

- What is the potential to create conditions that are more favorable to resident redband at the expense of the anadromous version of the species? What is the appropriate balance in conditions to produce a favorable outcome relative to target fish species?

Hydrology & Geomorphology

- Can reconnecting floodplains in the LCR generate the same or similar cooling effect of stream temperature?