

Stanshaw Creek Water Rights Meeting Notes

January 14, 2016

Attendance:

By Phone:

Bob Pagliuco – NMFS Arcata
 George Frey – USFS Six Rivers Lands and Minerals
 Julia Everta - USFS Six Rivers Lands and Minerals
 Jennifer Bull - CDFW
 Caitlin Bean - CDFW
 Mark Elfgren – CDFW
 Diana Henrioule - SWRCB
 Barbara Brenner – Churchwell, White (Legal counsel for Cole's)

In Person:

Craig Tucker - Karuk
 Toz Soto - Karuk
 Will Harling - MKWC
 Doug Cole – Marble Mountain Ranch
 Konrad Fisher – Downstream Landowner on Stanshaw Creek
 Taro Murano - SWRCB
 Skylar Anderson - SWRCB
 Stormer Feiler - SWRCB
 Kenneth Petrezeli – Enforcement - SWRCB
 Margaret Tauzer - NMFS
 Brock Luetke– Marble Mountain Ranch caretaker
 Ross Taylor – Ross Taylor and Associates (Karuk Stanshaw Study consultant)
 Leroy Cyr – SRNF Fisheries Biologist
 Joey Howard – Cascade Stream Solutions – MKWC Consultant on Stanshaw Project

Will: At end of day, hopefully we can have workable solutions that work for fish and human users of Stanshaw Creek. We would like to collectively define 2-4 alternatives that could meet that balance. Unclear to us what physical solutions could meet water board and other agency conditions. Are the physical solutions we're putting forward ones that everyone can support?

MKWC has about \$30k to develop physical solutions that meet needs of fish and landowner.

Water Board is here to answer questions.

Taro: We missed our window of opportunity to get this report out quicker. Division of Water Rights has had a lot of resources diverted to Drought Response across the

state. The investigative report is a compilation of data and requirements from all involved agencies, including NOAA, CDFW, Karuk Tribe and previous work dating back to 1998. We wanted to provide a complete account for the record. Does anyone have any questions or concerns?

DWR became involved in 1998, and in 2014 took opportunity to meet with stakeholders and get oriented to circumstances. Took a second trip to collect data. Found that conveyance system was prone to failure. Didn't find any unauthorized diversions. Most of the concern DWR has is with point of diversion, amount of water being diverted, and continued use of water even though hydroelectric is not producing power, as well as return flows.

Craig: What's the timeline now?

Taro: Mr. Cole requested an extension and it was granted until Jan 19, 2016, to respond in writing to our findings and how he plans to address corrective actions, and in what time frame. Looking forward to learning what corrective actions he plans to take based on our report.

Will: Can the engineering and energy audit and USFS authority for changing point of diversion fit in that timeline? May be shorting fish by forcing Mr. Cole to come up with a solution that may not work for fish.

Konrad: Can we talk about interim solutions?

Taro: There are certain things that could be looked at and addressed now, not later, such as bypass flows. Decision from Mr. Cole on amount to divert can be made by Jan 19. A diversion plan should include a control gate and some monitoring so we know bypass objectives are being met.

Doug: Thanks for your effort, it's very comprehensive. My overall concern is that my reading of your report is that it seems to have shifted focus from improving streamflows at lower section of creek to include sedimentation and a lot of other issues that may not be immediately resolved. It's alarming and overwhelming to try to address all of these issues at once. To manage my ditch line without returning sediment to the stream, decommissioning a berm line (tree fall, elk, etc could jeopardize this) I don't know how to do some of these things.

I don't think I can give you all these firm answers yet. We will get a response to you saying that we're willing players, outlining what we can address quickly and what we need to get funding for. How do we get solutions that don't bankrupt a business or affect other stakeholders. Report also assumes that we're the only diverter off Stanshaw – that's not true, there are six others even though they take much less water. But impacts to other diverters if stream is truncated needs to be looked at.

Taro: I'm not aware of anyone else diverting that quantity of water from one creek and returning it to another for hydropower production.

Doug: In 2004, MKWC proposed a grant (with us) to try to address those issues. I'm glad to be here. I hope we can work through all these overwhelming and sometimes conflicting demands from various agencies.

Taro: If you were to pipe your ditch flow, it would likely take far less maintenance than it takes now.

Doug: I support piping. The call for berm decommissioning concerns me. At a larger scale we need sustainability.

Stormer: Part of your plan needs to include an access trail to use after berm is decommissioned.

Taro: That was also one of the reasons we recommended that a control gate be installed. That would reduce the amount of constant maintenance needed because it would more efficiently regulate the amount of water you're taking.

Doug: I have real concerns about whatever we build ending up down the creek after the first major flood event.

Konrad: I'm not convinced controlling the point of diversion is the answer. I suggest we look at other points of diversion because the ground stability may never be good enough at the current point of diversion.

Ken: We want something that shows a commitment to developing a plan for the plans that would hopefully substantially resolve these issues. We've acknowledged there are some uncertainties, but we want to see a commitment to work expeditiously towards real solutions.

Doug: I think that's doable now that we have an opinion from your office.

Taro: SWRCB would like to see timelines in the plan you submit. That to me will ensure that you are committed to dealing with these issues.

Doug: Some things we can deal with sooner using stopgap solutions, such as leak in storage tank. I still need the resources to find long term solutions to this type of problem.

Craig: How about the bypass flow? Does Mr. Cole agree with this?

Doug: There's conflicting info in there. And practical considerations that are overlooked (such as how to water 25 horses) with no diversions some times of year. Needs clarification about what I'm going to be accountable for as a business and other living entity on system.

Margaret reviews power point presentation. See attached.

Margaret: It's a minimum bypass when you are withdrawing.

Stormer: Does your diversion run straight to your house through a pipe or does it go through storage first?

Doug: The water flows down a ditch to a penstock that goes to the hydro system and stockwater/irrigation system, as well as another smaller pipe that comes off the ditch before the penstock that goes through tanks and filtration for human consumptive use. Hydro and stockwater use from the penstock has no storage (except for stock water tanks and the pond for fire use.) The non-human use is the much larger consumptive use.

Stormer: Water storage and forbearance are potential options.

Ken: Is that 10 percent of what flow is at that time at the point of diversion?

Margaret: Yes.

Margaret: Minimum flows are verified by flow measurements, in addition to watershed area scaling based on Ti Creek flow data from 1964-1966.

Ross: Is ranch required to monitor and adjust on daily basis?

Margaret: Yes. That's the recommendation.

Doug says consumptive use is 0.35 cfs. Not clear if hydrograph in Margaret's presentation used this number?

Konrad: The 0.35 cfs is out of touch with allowed or normal consumptive uses today.

Some discussion and not complete agreement about what agreed upon consumptive use for Marble Mtn Ranch is. In a prior letter, SWRCB said this figure was 0.11cfs. In the report from Lennihan Law and Cascade Stream Solutions, this figure was up to 0.35 cfs for domestic and irrigation.

Doug: Seems to me we need yet more info. What exactly is our power demand? What exactly is the expectation? Can we drink and run our hydropower at the same time?

Margaret's calculations (based on water in system during wet winters such as 1962) suggest that storage during winter months could resolve water shortages for ranch during drier years.

Craig: The modeling is never perfect, but we'll probably get to a point in modeling where we have a lot of confidence about understanding and planning for worst case scenarios.

Doug: Can we meet all needs with no diversion at all? I don't know.

Margaret: Assuming that the return flow from hydroelectric occurs above hwy 96. If that return flow comes back, it's really close to the 2.5 cfs that CDFW is requiring.

Craig: What do return flows have to do?

Margaret: Protect public trust.

Taro: As part of your plan, you can consider storage. It may limit your irrigation, I don't know. But you can store water in your ponds.

Craig: Have you ever tested whether you can have a well to get you through summer months?

Doug: Yes, wells were dug in the 90's and came back showing insignificant flows. There are springs periodically on the property, but they run close to the surface and can't be tapped. I've already tried that option.

Craig: You could do hydrologic modeling to come up with number for how often flows will likely drop below consumptive use needs. That would help you figure out whether winter storage is a viable solution. According to Margaret's models, it's pretty rare that even in the driest of dry years, it will completely dry up.

Taro: Margaret's CDFW flow solution should be part of temporary plan. The idea is that Mr. Cole would implement this bypass in the short term, but Mr. Cole is free to conduct a study that would support a different solution in the future.

Doug: Where to store large volumes of water and getting permission from USFS seems potentially onerous. Not that they're impossible...

Taro: I don't think anyone here is recommending storage on FS land. You could apply to expand current capacity on your property.

Ken: Storage might be the long term solution we're looking at, but we have today also discussed returning more of the non-consumptive use water back into Stanshaw. I don't think we should get so caught up in the potential for storage that we stop talking about anything else.

Margaret: NMFS feels the summer flows are the most critical for fish.

Doug: One question is when we shut off hydropower use. I think we need more data here.

Will: Does consumptive use continue to use or get zeroed out once creek is at 1.5 cfs.

Margaret: It gets zeroed out.

Skylar: It would likely be a maximum of about a 20 day forbearance requirement. Pumping up a hill for 20 days at a time, 20 hours per day, you're maybe going through 55 gallons per day per person, so not a high fuel cost. It's pretty doable.

Joey: Current issue is that water or diesel is being used to generate power. To pump during the forbearance, you have to generate power somehow. It potentially gets expensive.

Taro: There is going to be that balance required to protect public trust resources. It's going to limit your uses somewhat.

Stormer: Your proposed physical solution (Mr. Cole) needs to address sediment impacts.

Jennifer: CDFW recommendation is at the bridge, at the culvert. NOAA's recommendation is not in conflict with our recommendation. We'll use the 2.5 cfs at the culvert and 1.5 cfs at the point of diversion.

Craig: Is there a concern about thermal impacts of return flows?

Will: Any of these physical solutions are going to require permits. What is the likelihood that we'll be able to get permits to implement these physical solutions?

Stormer: Good chance you may need a CWA Section 401 permit.

CDFW FRGP funding is discussed because it helps with permitting.

Will: Last summer, unimpaired flows at Hwy 96 would have been much lower than 2.5 cfs. Does this put Doug in a tough spot between CDFW and NOAA requirements?

Craig shares this concern, doesn't want to give landowner regulations that are difficult to understand and manage for.

Margaret says no.

Margaret: I'm not concerned because data shows that creek almost never gets this low (1.5 cfs), and when it does, we cut off use.

Skylar: Is FS aware of anyone has special use permits for Stanshaw Creek watershed? Aerial photos don't show any structures or marijuana cultivation. There are no other diversions according to our systems.

Doug: Robinsons and Robison and Short divert water from a trib to Stanshaw.

Ross: How easy is it to fine tune systems to these requirements?

Margaret: A side channel weir needs to be designed to adjust automatically using a stage/flow hydrograph measurement.

Ross: Is a rating curve required for compliance?

Margaret: Yes.

Doug concerned about durability of solution making these improvements in Stanshaw Creek itself, since large boulders are mobilized during flood events.

Margaret: Bedrock can help. Engineers can figure that out.

Joey: Won't be without challenges. It's not an ideal setting for getting precise measurements. I'm not saying it's insurmountable, but it's not like being in a low gradient stream system like the Shasta Valley.

Will: Time to hear from other stakeholders.

Konrad: I've been there as long as Doug Cole, and would like to put in a fish-friendly hydro system. I want to be sure this gets put into the equation. Maybe we could engineer a solution that takes my water needs, power needs into account. I have also been impacted by flows. I would like the bypass reach to end above the coho reach. I'd like return flow to go into the creek at the level of the highway. I have a riparian right.

Will: When Doug's flows get zeroed out, what happens with the other water users?

Clarification about where Patterson Ranch diverts. Will and Konrad say a tributary.

Skylar: Why hasn't anyone reached out to include Patterson Ranch diverters in these discussions?

Margaret: Our recommendation is assuming unimpaired flows, so we would want all water diverters to share the 10 % allowable diversion.

Toz: There may be a diversion for stockwater at the Stanshaw Creek trailhead.

Konrad thinks that diversion is negligible.

Barbara: When you're talking about dry situations, Marble Mountain is already not using hydro and other users also need to cut back in that scenario.

Skylar: 0.1 cfs would sustain every user in the watershed for domestic uses. Keep that in mind.

Craig: I think we should create some kind of baseline domestic diversion that users in Stanshaw could depend on. Tribe is going to demand that minimum instream flow and pond connectivity near mouth are achieved or will enforce ESA. We should be able to engineer backwards from these ESA requirements and make it all work. We're willing to help you find \$\$ and support if fish get water they need.

Doug: It's an old diversion. There's room for improvement on it. It's hard to say I can build something here that's going to last. Konrad and I have three points of agreement about approaches worth investigating: 1) A diversion that keeps current point of diversion and re-waters Stanshaw at the highway. Address water losses in conveyance through piping. (2) Divert higher up in the stream system and return flows higher up. Return flow would be roughly where current point of diversion. (3) Solar power generation for hydropower system operation. We agree on these methods in principle, setting aside considerations of water quantity and timing of diversion. Some of these approaches are not mutually exclusive. I favor Option 1.

Ken: Would piping eliminate overtopping and CWA problems we have with Mr. Cole's ditch?

Konrad: I think hillside is too steep to have a solution that wouldn't slump off in heavy rains.

Will: Burying pipe may help.

Ken: Are there more stable locations for point of diversion higher up?

Doug: I don't see that, but I'm willing to explore that.

George: Any type of change of location in current ditch and penstock is just going to create a larger burden for environmental analysis. I would advocate against that.

Skylar: Solar may give us more to work with. 0.1 cfs is enough to support 1300 people at 55 gallons a day, so it should be plenty for your business needs.

Doug: Marble Mountain Ranch needs to be able to continue operating as a Fire Camp base.

Doug: Barbara has a draft response that we'll modify based on this conversation and get to you within established timeframe.

Margaret: You could have a small pipe size for times when creek flows are less.

Taro: 55 gallons per day per person for health and safety is the number we use for drought conditions at Water Board.

George: We want to work with regulatory agencies. Any solution that involves returning water to Stanshaw Creek would require an environmental review process

and we'd need a solid proposal before we could start in on that. There have already been some environmental studies and I'm sure we could use those to get compliance clearance. We'd like to be involved early on in looking at alternatives so we can flag anything we could not approve. We'd like to see water from hydro system returned to creek. Would like to see ditch improvements and metering at diversion point.

Leroy: I've been around and working on this issue for a while and I'm happy to see this process moving along. I think there are feasible solutions. Our hydrologist recommended some of them a decade ago. It would be nice to have a range of alternatives and get FS involved early so we can look at them on the ground. The region-wide Aquatic Restoration Strategy Analysis could potentially include solutions/NEPA for physical solutions to this problem. Lower Stanshaw site is already on our list, and if there are any actions we want to implement, we should include them in the analysis. This would probably be an opportune time to bring other diverters in watershed into discussions.

Will: Lots of moving parts, especially once we get into nitty gritty of funding sources and various timelines and constraints. We have through this summer to move on concepts. Three options are on the table. Heard some FS skepticism about Konrad's preferred option of moving point of diversion upstream.

Barbara: There's a lot of other stuff recommended in the report from the Water Board besides physical solutions, such as a water balancing exercise. I hate to put a lot of time, money and energy into these other things if folks are going to be able to agree on a physical solution.

Meeting convened at 1 p.m. and adjourned at 3:25 p.m.

Erica Terence took notes. Will Harling edited notes to clarify points. Folks should please provide clarification if we got anything wrong.

ATTACHMENT: M. Tauzer PPT Text

Attachment #1: Margaret Tauzer (NMFS) Power Point Text

SLIDE 1

NMFS bypass flow recommendations for Stanshaw Creek

- May 15 – October 31 = 90% of unimpaired flow with no diversion at Q below 1.5 cfs (ref. Richter 2011).
- November 1 – May 14 = minimum bypass of 2 cfs

SLIDE 2

- 1.5 cfs is the estimated low flow on a dry water year.
- All Stanshaw flow is needed for cold water refugia in when the Klamath begins to warm up in May throughout the warm season. A 10% limit to the diversion protects the unimpaired hydrograph.
- Pond connectivity is most important in the early summer months when juvenile fish seek the cold areas (est. 2-3 cfs)

SLIDE 3

Table 1. Estimated range of 7-day low flow for Stanshaw Creek based on scaling Ti Creek data by watershed area.

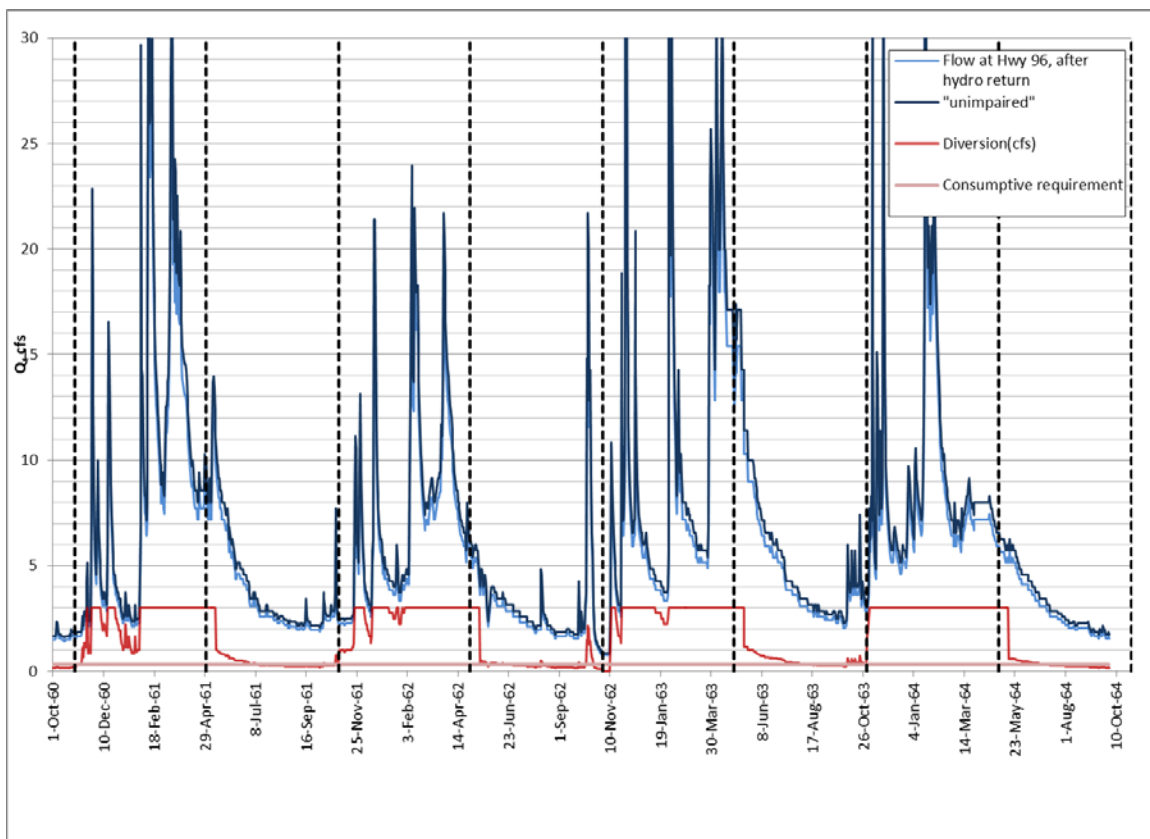
| | Range of 7-day low | | |
|------------------|--------------------|---------------|---------------|
| | minimum (cfs) | maximum (cfs) | average (cfs) |
| May | 3.1 | 16.8 | 8.1 |
| June | 3.1 | 9.3 | 4.9 |
| July | 2.2 | 6.0 | 3.3 |
| August | 1.9 | 3.8 | 2.6 |
| September | 1.7 | 2.9 | 2.2 |
| October | 1.0 | 15.1 | 3.4 |

SLIDE 4

Nov-May 14 recommendation

- Stanshaw Creek used for off-channel rearing and macroinvertebrate production.
- Hydraulic analysis and cross sections show that about 2 cfs is the point of inflection where the edgewater quickly recedes with lower flow. 2 cfs is recommended minimum bypass flow.

SLIDE 5



SLIDE 6

