

Questions for Hard Rock Study authors from TFW Policy Committee members
October 17, 2017

For Bill Ehinger:

- To what extent does 100% buffer differ in 7-day daily maximum and over time, versus FP treatment?
 - Is there a relationship between buffer length and temperature response?
 - Do these results inform Ecology water quality standards? If so, how? If not, why?
- Suspended sediment export results are confusing when viewed solely as effects of harvest treatments. You briefly touched on this in your presentation, but could you expand on the role of roads in sediment delivery at reference sites? Since roads are likely to be the dominant source of non-landslide sediment delivery, was the study effective in teasing out treatment differences even though the reference also contained forest roads? Would references without roads show differences among buffer treatments? Since the goal is to learn about treatment effectiveness, I'm concerned that sediment-delivering roads masked the treatment effect. Please address this.
- Was there any statistically significant data showing length of harvested stream reach before significant increase in stream temperature during the early part of the 5-8 year canopy closure window of risk due to loss of shade?
- Of the stream segments with elevated water temperature prior to canopy closure, how far downstream in the forested areas before the increased temperature had equalized to its normal expectation for that elevation?
 - And/or, what were the temperature changes from the bottom of the treatment area and the TYPE F break point – how much of that change does the science/literature attribute to normal elevation temperature normalization?
- For each REF, 100% and FP treatment (F/N break), how often (during each day throughout the year) does the temperature (7day max; 7day min; diurnal) exceed pre-harvest levels and by how much?
- How has the annual temperature regime changed from pre- to post-harvest at the F/N break (e.g., temperature duration curves or temperature frequency histograms)? These findings are relevant for assessing biological consequences.
- For the extended monitoring from Phase 2, please provide the same analyses above.
- What is FP RMZ buffer effectiveness relative to FFR target at F/N break and downstream?
- What is FP PIP buffer effectiveness relative to FFR target at F/N break and downstream?
- What is target for recovery and where in Np or downstream does it apply?

For Greg Stewart:

- Water yield (base) has been demonstrated to increase in literature. You presented a different perspective with your interpretations; why?

For Aimee McIntyre:

- Amphibians
 - What is the role of probability of detection in your conclusions?
 - P(capture) of Giant Salamanders changed in FP buffer treatment? (e.g. mix of buffer/non-buffer areas.)
 - Could/should Torrent Salamanders be habitat health indicators/surrogates for other amphibians?
 - What is the role of PIP buffers to provide habitat for amphibians and what is effectiveness of PIP buffers to maintain amphibian populations?
 - “Viability” was equated with “density” at the monitored sites. What other metrics could be used?
- Wood Loading
 - CI of statistical difference between reference and others? Looks like a significant difference in LWD.
 - Variance in each data point? Why is the variance in the reference site so large?
 - To the extent there were positive outcomes of RMZ blow-down during the study period, is there any biological reason that a LWD Placement Strategy couldn’t replicate, speed, or improve upon natural LWD recruitment processes?
 - I got lost in the pros and cons of logging slash in/over the Np streams – is it a net positive, negative, or no significant affect?
 - I got confused by the pros and cons of extra LWD/logging slash after harvest relative to the “wetted” portion of the RMZ – net positive, negative, or no significant differences?
 - How was the 10 cm number arrived at to characterize “large” instream wood?
 - What does available information tell us about how the instream wood will function over time as a function of size? E.g. what do we know about the relative proportion of large/small wood in an undisturbed basin? (Do we know what we shooting for in terms of functionality/outcomes w/r/t wood amount and relative sizes?)
 - What is the ecological significance of measuring the degree of stream channel “obstruction”? i.e. is there a working hypothesis around obstruction/no obstruction as a way to way to stratify the data? (or is this simply an amphibian detection issue?).
- Which specific rules are directly being tested for effectiveness?
- How does this study address the effectiveness to achieve the relevant functional objectives and performance targets related to those specific rules? Each section should address effectiveness to achieve the relevant functional objectives and performance targets that are related to the rules. For each variable to Address L-1 Question: “Will the rules produce forest conditions and processes that achieve resource objectives as measured by the performance targets, while taking into account the natural spatial and temporal variability inherent in forest ecosystems?”

For Jason Walter:

- (YOY)/Age-(0) aren’t feeding. How did you calculate growth rate?
- PIT tag data used for growth?

- Why did excluding study sites where cutthroat was not the uppermost salmonid (or uppermost fish, for that matter) improve the study?
- Analyses of fish abundance, body size, and habitat characteristics without any controls for treatment-effect boldly violates the broader study design because results could vary randomly or as a treatment-effect, but the distinction would not be detected without replication. If treatment has a significant effect, what is to be learned that is not confounded by treatment effects?

For Dave Schuett-Hames:

- Can you describe expected stand development differences between treatments as a result of varied tree-mortality among buffers?
- Is stand modeling appropriate for these narrow, wind-affected stands?
- How do you see the variability in stand age influencing the variability in stand structural responses to treatments?
- What are the study implications for the establishment/re-establishment of riparian stands?
- How did the 2007 storm affect each study site and what was the relative differences of storm impacts among treatments prior to the harvest years?
- How effective are PIP buffers in providing the functions intended by the FFR?
- What is PIP buffer potential to provide LW over long-term?
- What is FP RMZ potential to provide LW over long-term?
- What is effectiveness of ELZ and FP buffers to minimize slash relative to FFR target/functions?
- Is slash in clear-cut reaches an effectiveness concern or mitigation for loss cover?
- What is FP RMZ buffer effectiveness relative to FFR target, both within Np stream and downstream?

Misc/for all authors:

- Please have presenters mention derivations from the study design.
- Can you please document your results in terms of the Schedule L-1 performance targets?
- The SFL template proposal for Np would replace the rule 50' rule buffers (on parts of the stream reach) with 25' buffers full length. For each of the studied attributes, what's the best professional judgement of where a full length 25' buffer would fall relative to the three management scenarios?
- How is it possible to have a "dry portion" of a perennial stream? This is a serious question - help me explain this to my SFLO peers who use this seemingly obvious "DUH" question to not believe in the validity of Forest and Fish "science". Alternatively, did the study areas have any/many intermittently dry Np portions and were there any significantly different findings between the three study scenarios in the dry portions?
- Will you discuss in the upcoming summary of findings whether or not the statistically significant observations translate into actual loss or enhancement of particular stream functions? Long term(?), or short term(?) and if short term for about how long?

- Did any of the research capture any data/observations on birds, or other non-amphibian critter differences between the 3 scenarios?
- After considering and integrating the results from each chapter, what is the overall effectiveness of the FP rules in meeting resource objectives and performance measures?
- What is the overall effectiveness of the FP rules over time?
- What is the applicability of the study findings to headwater streams on FFR lands?
- If resource objectives and performance targets are not currently being met, what does the study tell us about how long it will take to achieve them?