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TO: TFW Policy Committee  
FROM: Mark Hicks, Adaptive Management Program Administrator   
SUBJECT: WFPA FPA Np Basin Analysis Proposal Initiation Request

On February 19, 2021, Darin Cramer with the Washington Forest Protection Association (WFPA) provided me (Administrator) with a Proposal Initiation (PI)<sup>1</sup> request for a Forest Practices Application (FPA) based Np Basin Analysis.

The request is to have one of our Cooperative, Monitoring, Evaluation and Research (CMER) Committee Science Staff conduct a desk-top study with the purpose of characterizing the pattern of clear cut harvests within individual Np basins caused by individual FPAs.

This memo serves as the Administrator's portion of the first stage in considering new project proposals – Initiation and Screening of Proposals. This screening stage is to include:

- Summary of proposal
- Recommendation of applicability and value to the AMP, including identifying those proposals that should not be included in the process
- Recommendation of proposed track for AMP development
- Summary of next steps if proposal is approved by Policy

During this first stage of proposal initiation and screening, the Timber Fish and Wildlife Policy committee (Policy) has the opportunity to deliberate over proposals and consider the information provided by the Administrator. The Policy Committee is to consider proposals for their relevance and suitability to the AMP as well as timing of implementation, including urgency and appropriate sequencing. The Policy Committee is additionally advised to consider budget implications and potential impacts of the proposal on the CMER work plan.

**Recommendation by Administrator:**

My analysis and recommendations to Policy are provided in adherence with the directives provided in Forest Practices Board Manual Section M22-8, Guidelines for Adaptive Management Program; and in WAC 222-12-045(2)(d), Adaptive Management Program, Process.

The proposal initiation process in WAC 222-12-045(2)(d) and in Section M22-8 of the Board Manual only provide pathways for proposals which are:

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<sup>1</sup> The full proposal is provided as a separate document to this TFW Policy Review package.

- i) Projects for development within the AMP, and
- ii) Completed outside science to be reviewed by the Cooperative, Monitoring, Evaluation, and Research Committee (CMER).

It is my judgement as the AMP Administrator, the WFPA PI should be rejected.

The proposal:

- Violates the policy-science fire wall by assigning work directly to CMER staff
- Is not a simple desktop study that can be quickly
- Does not provide clear technical steps
- Does not include a scientifically robust sampling framework (number and distribution) to ensure the results are representative of the managed landscape
- Assumes without evidence the percent of a basin harvested is the critical point of comparison for the results of the completed CMER Type Np Studies
- Focuses only on the footprint for a single FPA during a single year within a basin – effectively excluding consideration of short term cumulative impacts
- Would require substantially more work before it would likely be accepted for implementation by CMER, which would be the next step for a science proposal
- Is unlikely to produce data meaningful to identifying any science-based limitations of the CMER Np study results, and thus seems unlikely to meet its stated purpose

### **Proposal Initiation**

Consistent with WAC 222-12-045(2)(d)(i) and the Forest Practices Board Manual, this PI was delivered by an Adaptive Management Program (AMP) participant to the Adaptive Management Program Administrator (AMPA).

Before proceeding further the AMPA is directed to assure the proposal identifies:

1. The affected forest practices rule, guidance, or DNR product;
2. The urgency based on scientific uncertainty and resource risk;
3. Any outstanding TFW, FFR, or Policy Committee agreements supporting the proposal;
4. How the results of the proposal could address AMP key questions and resource objectives or other rule, guidance, or DNR product; and
5. Available literature, data and other information supporting the proposal.

The proponents have reasonably provided their perspective on these questions, and I will additionally address them below as part of my Assessment of Management and Resource Implications.

### **Summary of the Proposal**

- WFPA is requesting support to have CMER Science Staff conduct an analysis using LiDAR data along with digitized FPAs associated with completed harvests that extend into Type Np basins
- To support their proposal WFPA has provided a schematic of the Np Basin Analysis method they propose be used along with a table showing how the data would be organized, and with a reference to the WAU they want CMER Staff to analyze
- The purpose of this research would be to compare the basin size and associated percent of basin harvested in the hard rock and soft rock studies to the broader population of Np stream basins on managed forestland subject to the rules
- This request would continue work begun by WFPA, and while they intend to move ahead with an expanded evaluation of FPAs on their own, WFPA suggests this work should be done cooperatively in the AMP
- Similar to the SMART buffer PI previously accepted by Policy and in CMER review, this PI is suggested to fill a perceived gap in critical information needed to more effectively deliberate on the Np workgroup report recommendations
- WFPA asserts this study is important to closing knowledge gaps regarding the:
  - Effectiveness of different Np stream riparian management zone configurations, and
  - Applicability of the findings from the hard rock (and soft rock) studies to common forest practices applied across the western Washington

### **Assess Adaptive Management Program Applicability**

The Administrator is to assess a proposal for its applicability and relevance to the AMP, i.e., whether it would affect how forest practices are conducted with respect to aquatic resources, or whether it is a directive from the Board to include within the AMP. In this step the Administrator is also to consider outstanding agreements including any formal agreements from TFW (1987), FFR (1999), or current Policy agreements related to the issue, and determine if they are interpreted correctly in the proposal. The Board Manual further provides that proposals “are initiated as requests for investigation of potential changes to forest practices rules, guidance, or DNR products.” In general, the types of proposals considered for the AMP are requests for:

- i) Research and monitoring of scientific uncertainty and resource risks;
- ii) Policy interpretations and modifications to improve forest practices management and aquatic resource protection; and
- iii) Review of completed technical studies or issue analyses for consideration in the adaptive management program”.

As submitted, the PI takes the form of a constrained risk assessment. With improvement to the proposal's sampling methods (or disclosure of them if such a plan exists) the assessment would be able to provide a frequency analysis of the percentage of basin harvested within single FPAs. It is not clear the data produced, even if the sampling scheme was made more defensible, would come in a form that would assist policy in applying the results of the Np studies. The reasons are discussed in more detail elsewhere in this transmittal, however, the key issues are:

- The Np studies found warming at multiple spatial scales within the Np sample basins,
- The warming was persistent enough to question why a single FPA in a single year would be the appropriate point of comparison, and
- Percent basin harvest has not been shown to be an important driver in warming independent from RMZ shading.

### **Assessment of Management and Resource Implications**

In order to inform Policy and the Board of the applicability and relevance of a PI to the AMP, the Administrator is to provide a coarse level assessment of management implications using the Framework for Successful Policy Committee/CMER Interaction. The questions that comprise the Framework establish the standard process for assessing a proposal's applicability:

**1. Is the proposal intended to inform a key question, resource objective, or performance target from Schedule L-1?**

- No. I could not identify any key question, resource objective, or performance target this study informs. However, Basin-wide testing is an L1 effectiveness monitoring task (see: Heat/Water Temperature (2) d)) Performance target: Water quality standards – current and anticipate in next triennial review “Investigate basin-wide cumulative effects of forest practices, and potentially other land uses, on attainment of temperature targets”).

**2. Is the proposal intended to implement projects listed in Schedule L-2?**

- No. I could not identify any project or question in Schedule L-2 this study informs.

**3. Is the proposal intended to inform the forest practices rules, guidance, or DNR product? Is the specific rule, board manual section, DNR product, or effectiveness of compliance monitoring cited and key language provided correctly? If the proposal is for a new forest practices rule, does it fill a gap? If so, would it fit within the current forest practices structure?**

- Yes. It is intended that any alternative prescriptions for Np Riparian Management Zones in Western Washington proposed by Policy as part of upcoming deliberations be conditioned to reflect the comparison between patterns of harvest in FPAs as

compared with the FPA harvests conducted in the Hard Rock and Soft Rock CMER studies. Although a specific rule is not clearly identified in the proposal, it would likely be WAC 222-30-021(2)(b) which describes the Type Np RMZ buffer width and length requirements. It would also potentially require amendment of any complimentary Board Manuals.

**4. If the proposal includes a completed study, was the study carried out using protocols and standards similar to CMER (i.e., study design, peer review)?**

- The proposal is to conduct a study, and it is intended to be a quick analysis by CMER Science Staff rather than following the protocols required for CMER Committee research. There is no study design, sampling plan, implementation plan, project plan, assigned project team or SAG, and no clear process for assembling and reporting the final results and sending them into peer review.

**5. What would/does the study tell us?**

- Based on the PI as presented, the outcome would be basic statistics on the acreage of clear cut harvest expressed as a percentage of selected type Np basins that occur in relationship to a single FPA selected that crosses into those basins.

**6. What would/does the study not tell us?**

The PI asserts information gained from this analysis will provide context about Np basin size and harvesting patterns which is highly relevant to AMP deliberation over alternative Np stream RMZs and other potential solution components.

As described, I do not see how the study will provide a technically adequate point of comparison for applying the results of the completed CMER Type Np studies (Hard Rock and Soft Rock). The reasons include:

- **Incomplete Sample Frame to Produce Unbiased Assessment:**
  - It is not discussed how many basins will be examined, how they will be selected, or how an individual FPAs will be selected to represent the harvest within each basin. Without this information it is uncertain if assessment will provide an unbiased representation of harvest patterns in Western Washington.
- **Data Analysis Methods are Lacking:**
  - It is not discussed how the data will be analyzed or presented beyond the simple statistic collected for each basin. It is therefore assumed only course descriptive statistics will be applied to both the Np study basins and the sample FPA foot print.
- **Basin Harvest Area is not Known to be a Primary Driver of Stream Warming:**

- No scientific foundation is laid for asserting that percentage basin harvested is a primary or important driver in the responses observed in the CMER Np studies. Defensibly transferring the findings from the CMER Np studies to the broader landscape should include the key variables that are well known to affect stream warming, and would need to recognize the overriding effect retaining tree-buffers has in mitigating these response. These would include volume and pattern of surface flow, ground water and hyporheic refreshment rates, incision and topographic shade, basin aspect and stream channel orientation, and proportion of watershed using 50 foot versus wider buffers. In the CMER Buffer Integrity and Shade study warming was documented in association with thinning short reaches of stream that only had the overhead canopy manipulated – not with clearcutting outside the RMZs.
- **Percent Harvest is a Confounded Metric for Extrapolating Study Results:**
  - Percent harvest does not consider where trees were harvested and where they were left and how that effected the responses in the CMER Np studies. For example, wider buffers were retained in locations where there was unstable slopes and economically inaccessible timber. In this way, correlations between basin harvest and temperature response can be confounded.
- **Results from the CMER Np Studies are at multiple spatial scales:**
  - The methods used in the CMER Np studies allow the temperature responses to be examined at a scale less than the entire basin. For example, waters warmed rapidly as they emerged from the UMPPF buffers post-harvest, warmed rapidly as water re-emerged where it had gone subsurface, and analyses examining treatment effects occurred at the sub-basin scale.
- **A Single FPA Harvest Excludes Cumulative Impact from Sequential Harvests:**
  - Temperature remained elevated for multiple years in the CMER Type Np studies. Amphibian responses were also longer-term in nature. It is reasonable therefore to account for harvest patterns that occur sequentially over time in individual basins. Knowing the extent to which this occurs should have more policy relevance then comparing the footprint of an individual FPA.

**7. What is the relationship between this proposal and any other studies that may be planned, underway, or recently completed?**

- There is no direct linkage between this study, its methods, or its results to other planned, ongoing, or completed CMER studies beyond those already noted above. It is meant to serve as a basis to deliberate on setting constraints for any alternative buffers proposed in response to the Type Np Hard Rock and Soft Rock studies, and the issue of the spatial level of response is additionally informed by the reach level

responses from the Type Np Buffer Integrity and Shade study, and the Type F Bull Trout Overlay Temperature Shade studies conducted by CMER.

**8. How much of an incremental gain in understanding would/do the proposal results represent? Explain how the proposal's results might affect the current rules, numeric targets, performance targets, or resource objectives.**

- The full scale of the effort is not clear in the proposal, but even under the best case scenario (an unbiased FPA harvest population estimate) it seems to have limited science-based value for constraining the application of the Type Np studies conducted by CMER. See the response above to question number 6 for explaining the limitations of this proposal for properly assessing the scope of inference and relating that inference only to the gross scale of harvest in the test basins.

**In addition to the above eight questions, new proposals need to additionally answer: What is the urgency based on scientific uncertainty and resource risk?**

- The proponents suggest the project is timely because Policy has initiated a process to develop revised Type Np stream buffers by the end of 2021. This is in part due to concerns about needing to have a proposed rule by the end of 2022 in order to retain the Clean Water Assurances. This urgency is expressed as being based on the scientific uncertainty (gap in knowledge) regarding alternative buffer configurations that are more cost effective for landowners.
- Given my concerns over the proposed methods and the relevance of the percent basin metric to extrapolating the findings of the Np studies to the larger population of harvests on the Westside, I am not able to concur with the proponent's assumption about urgency.

## **Assessment of the Proposal's Development Track**

For each proposal, the Administrator recommends a proposal development track to the TFW Policy Committee based on the nature of the proposal and amount of information provided.

Science track: The science track evaluates currently available science, collects new information through research and monitoring, and synthesizes the best available information into a technical summary for Policy's consideration. In all cases CMER is responsible for conducting synthesis of research and monitoring information and for producing reports to Policy. Proposals requiring scientific assessment or analysis are to be directed toward the science track.

Policy track: Proposals recommended for Adaptive Management Program development following the policy track are those related to interpretation and implementation of the TFW Agreement or the FFR. Proposals seeking to change or clarify policies or change the way existing science is implemented in the rules are to be directed toward the policy track.

The WFPA proposal is a scientific assessment of the frequency of harvest within the framework of type Np basins. Given this, it is my judgment the proposal would need to go down the science track. As such it would need to be provided to CMER in order to allow the committee to agree on how to best accomplish the task. CMER may agree with the idea to have the study implemented by an AMP Staff Scientist, but they still need to review and agree to the decision and on the details of the assessment methods.

As provided, however, there is no detailed study plan. Thus either a plan must be provided by the proponent for CMER to review, or CMER would need to develop such a plan. If a clear and complete plan does not already exist, then work would need to be done by CMER before it would be ready for implementation.

Based on my review of the methods provided, my consultation with two of our AMP Staff Scientists, and recognition the project cannot be sent directly to AMP Science staff, I conclude this will not be a quick desk top study as assumed by the proponent.

## **Proposal Moves into Stage Two if Accepted by Policy**

The AMP Administrator does not recommended the WFPA proposal be accepted as submitted on April 21, 2020. However, if after deliberation Policy should chose to accept the proposal in Stage 1, Stage 2 would begin.



The end product of Stage 2 is described as a Board-approved annual CMER work plan and budget from which proposals will be considered for implementation. From that point forward, the Board Manual process is written with the intention that proposed projects will be added to the MPS and CMER work plan, voted on by Policy, presented to the Board for approval at their May meeting, and then implemented.

The intent of this directive, however, would seem to be to allow CMER to communicate with TFW Policy on available resources to do the task and its relative policy priority in comparison to other ongoing and planned work. The intent could thus be met without tying it into the annual planning process if this proposal is accepted and ranked as a high priority by Policy.